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WORKSHOP
ON
MUNICIPAL CORPORATE MANAGEMENT
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PROGRAMME DIRECTORS

PROF. M. BHATTACHARYA
DR. K.L. HANDA

INDIAN INSTITUTE OF PUBLIC ADMINISTRATION
(CENTRE FOR URBAN STUDIES)
INDRAPRASHTA ESTATE, RING ROAD,
NEW DELHI-110002

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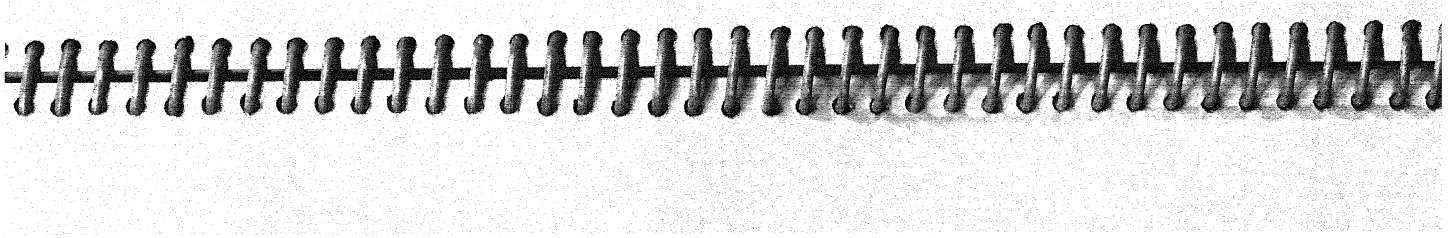

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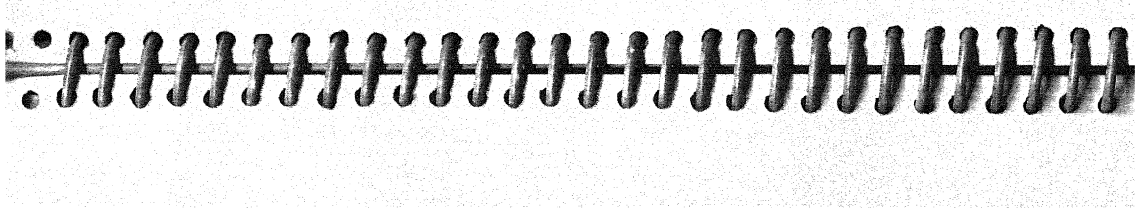

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Corporate Planning

The Concept of Corporate Planning

Planning attempts to influence and regulate the course of future events; to determine a strategy for future action. It involves the appraisal of current conditions, the prediction of social and economic change, the determination of needs, the formulation of objectives and alternative strategies and, to be effective, the review and evaluation of achievements. It is a process familiar in the administration of particular services or functions but increasingly difficult to achieve within a departmental framework. The main reasons for this are the accelerating rate of change in society due to population and technological changes, growing competition for relatively scarce resources, and the increasing recognition of the interrelatedness of the services which, in the past, have been seen as essentially self contained.

The concept of corporate planning, recognising that these changes are occurring, that these pressures exist, acknowledges the inadequacy of traditionally departmental approaches to meet modern needs and accepts the need for a local authority to adopt a broader approach in determining future policies. It emphasises the need for a higher level of integration between plans for its various services than has hitherto existed. It implies the need for change in traditional management and planning processes, for more and better coordinated research into facts, sociological trends, the interrelatedness of needs and alternative ways of meeting them, better communications within an authority, and more effective information systems.

Attempting a definition, one might say that corporate planning, in a local government context, is the planning of the authority's / on an inter-departmental basis in such a way as to secure the highest practicable degree of integration in its objectives and activities and the best possible use of its resources.

The Elements of Corporate Planning

It may be useful to identify several strands in the process of corporate planning, conceived in the terms suggested in the opening paragraphs of this paper.

1. One, clearly, is concerned with identifying and studying overall changes in the environment and considering in what way the authority should act to influence the impact of these changes in its area. Examples of such environmental factors are population changes, employment trends, major technological developments, transportation changes, and likely changes in national policy. These will obviously demand the fullest engagement of the Authority's intelligence and research facilities - wherever located.

2. Another element in the process must be the determination of needs - the satisfaction of which, in the most effective way permitted by the resources available, is the underlying purpose of the exercise.

3. A third aspect of the task is the correlation and rationalisation of departmental plans relating to the various services so as to conform to and form part of an integrated programme of development. This clearly involves much more than 'tidying up the edges' of separate plans. It implies an 'across the board' approach to planning, a continuous process of analysis and review, a willingness to seek the best solutions and programmes without regard to departmental boundaries.

4. A fourth strand in any realistic process of corporate planning must be a concern for the resources likely to be available and their allocation. This is not to say that decisions in this sphere should be the responsibility of a corporate planning group - certainly not of a group of officers. This is a field in which the Council itself must make the decisions. Nevertheless it is difficult to see how corporate planning over a period of years can be tackled realistically without reasonably based assumptions about the scale of resources likely to be exercised. In this context the corporate planning process may be seen to have a dual aspect. On the one hand it must proceed within broad estimates of probable future resources and to that extent assume certain external determinants of policy. On the other hand it must be expected itself to contribute significantly to decisions making by identifying problems, revealing issues and, where appropriate, posing alternative strategies.

available there is therefore a forcasting role.

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In its concern with these elements, corporate planning is seen to be closely related to Planning - Programming - Budgeting now widely receiving attention as a management system. It may be helpful, at this stage, to consider the nature of this relationship.

The Relationship between Corporate Planning and Planning - Programming - Budgeting.

PPB is a management system designed to ensure that an authority regularly subjects its activities to critical examination and review in order to achieve the best use of its resources. It is a self-imposed discipline containing a number of elements or requirements, the most important of which are the following:-

(a) the logical grouping of the authority's activities into a limited number of 'programme areas' such as Education, Transportation, Community Care, and Public Protection, (These rarely coincide entirely with traditional committee or departmental boundaries).

(b) a clear statement of the authority's objectives and sub-objectives in each of these areas showing in chart form the activities of the authority relevant to those objectives. This is known as a 'Programme Structure'.

(c) the presentation of the annual budget to members within this objective framework, rather than in the traditional form dictated by the requirements of financial control, so as to make readily apparent the objective to which any expenditure or activity is related.

(d) an attempt to measure as systematically as possible the degree of success achieved in pursuit of the various objectives, by devising suitable 'output measures' for each programme, monitoring results and feeding back the experience gained into the management cycle. This is a process which is far more difficult in fields such as Education and Community Care than in more readily quantifiable areas such as Transportation, or Public Protection.

(e) the analysis of what appear to be problem areas in the authority's services, and the examination of alternative ways of achieving the Authority's

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objectives, in contrast to 'just carrying on' with traditional ways and means of achieving the desired ends.

The Relationship between Corporate Planning and the Structure Plan.

There is obviously a close connection between corporate planning and the structure plan which many authorities are preparing, or are required to prepared, under the Town and Country Planning Acts. It may be worthwhile also to explore this relationship, and to consider what administrative conclusions seem to follow from it.

Corporate planning, as here conceived, embraces the whole of an Authority's activities, its objectives, and the use of its resources of all kinds. It has no statutory basis, but it presupposes the essential unity of the Authority, and may be seen as as an aspect of general management. Structure planning, on the other hand, has its origins in land use planning, and is a development of that concept which recognises that land use planning cannot be divorced from, but must in fact express, social policy and financial constraints. The structure plan therefore becomes much more statement of Council policy for the development of one resource (land) in a social and financial context than a document relating simply to land use. It is also a statutory document.

Although corporate planning and structure planning are closely related their scope is clearly not identical. Corporate planning is wider in the sense that it is concerned with the totality of the Authority's objectives and the use of all its resources. The structure plan is essentially concerned with the use and development of one resource - land. From another standpoint, however, structure planning is wider than corporate planning in that it is concerned with the development of land by persons and bodies other than the Authority itself. Each planning process may be seen as relating to part of something wider than either of them - the notion of a 'community plan'.

The following diagram expresses the view of the relationship suggested in the past paragraph.

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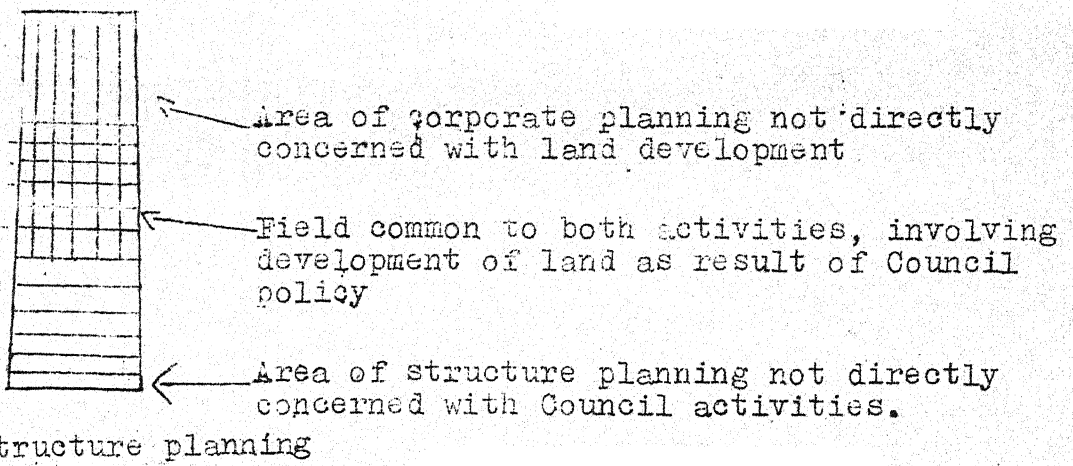


A Review of the Theory of Planned Programme Budgeting:

A definition of PPBS

A planning, programming, budgeting system (PPBS) is a management system, designed to assist members and officers in taking decisions about the use of resources by the monitoring of results and the feedback of this information to assist in the updating and revising of plans. It is not a technique but a comprehensive system of corporate planning and controls which harness analytical techniques to the needs and process of management. The emphasis is on providing timely and relevant information rather than a specific management structure.

The Sequence

PPBS comprises a sequence of steps as illustrated in Figure 1. To some extent, the sequence is flexible, since decisions at each stage can lead to modifications of earlier decisions; but logically theorder would be as shown below:

Stage 1 - Identification of strategic problems

An authority needs an information system that informs it of new or charging problems in the environment and about how effectively it is performing its current activities so that the need for policy changes is clearly recognised. Without such information, an authority is not likely to provide the public

with effective services in changing conditions.

Stage 2 - Definition of objectives

Once an authority has understood the nature of the problems facing it, it should decide what its objectives are in tackling them. Unless an authority has explicit objectives it has no yardstick against which to judge the effectiveness of alternative policies.

Stage 3 - Preparation of the programme structure

The programme structure breaks down each major objective into sub-objectives and arranges under them groups of activities (programmes) that contribute to their attainment. The programme structure proceeds from broad objectives at the top through sub-objectives and programmes, to detailed activities at the bottom. Programmes may be complementary or alternative ways of meeting objectives. The programme structure should include proposed as well as current activities, and should extent to the activities of other organisations where these do, or could, make contributions to the authority's objective.

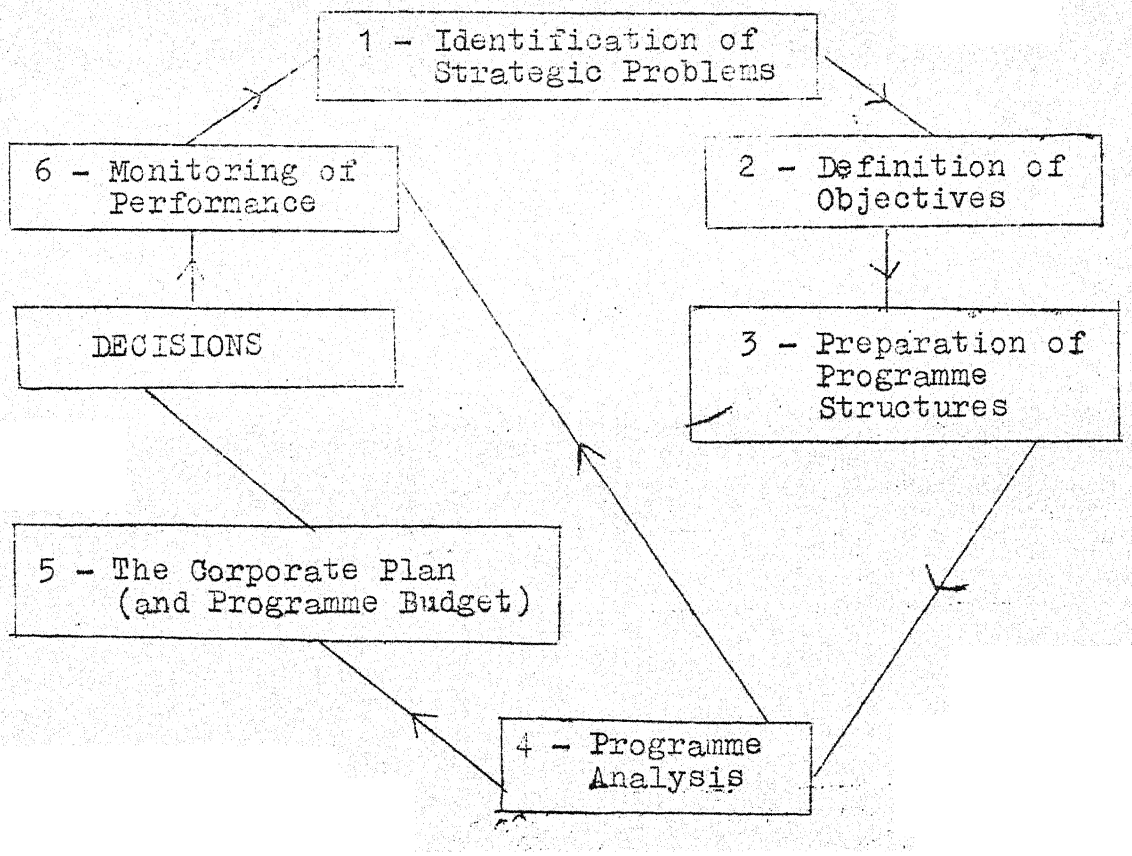
Stage 4 - Programme analysis

Once the full range of programmes for meeting an objective has been arrayed, it is necessary to assess the effectiveness of each in meeting the objective. The authority may be looking for the programme that gives the best performance for a fixed sum of money, or for the programme that gives a specified level of performance at minimum cost. In either case, it is necessary to calculate the full financial costs (capital and revenue), and often theland an manpower requirements, of each alternative over as many years as possible and to estimate the expected benefits or outputs. The analysis may be a simple, logical examination of a problem (an Issue Paper) or something much more sophisticated like cost benefit analysis. The results of analysis are presented to decision-makers in the form of written submissions (programme memoranda). Programme analysis does not presume to dictate decisions; rather, it aims to provide decision-makers with information on the costs and consequences of alternative courses of action.

Stage 5 - The corporate plan (and programme budget)

If the procedure so far described is to influence local authority policy and planning, it must be firmly linked to the budgetary process. This is done through the "corporate or

Figure 1 - The PPBS Sequence by Stages



programme plan" and the associated programme memoranda. This is a statement of all the resource costs and expected outputs of an authority's programmes for the next and subsequent years. The first year of the plan corresponds to the authority's budget, and the annual budgetary cycle becomes the process of rolling the plan forward one year. It is set out in a similar format to the programme structure and classifies all expenditure by objective. This, and the estimates of output derived from programme analysis, provide members with a basis for judging how successful programmes are in meeting their objectives.

In a system based upon planning, programming and budgeting, the emphasis shifts from the scrutiny of individual projects by Committees to examination of the policy and programme

underlying particular expenditure proposals. Major issues are identified and analysed and the results are presented to decision-makers to decide whether to amend the plan.

Stage 6 - Implementation and monitoring of performance

The information on outputs contained in the corporate plan and in background papers is a guide to those charged with implementing policies, and provides members and senior officers with targets against which they can check actual performance.

The major objectives of the authority may well be complemented by the use of "management objectives" techniques at lower levels in the authority so that all officers are given a clear share of responsibility in meeting the authority's objectives.

Such a system requires a management information system capable of reporting on the performance of programmes. Managers use this information to reappraise their objectives and programmes, and to make changes where necessary. In this way, the feedback of information about the preceeding period brings the system back to Stage 1.

The above are extracts from 'Corporate Planning in English Local Government - an analysis with readings 1967-72 by:- Royston Greenwood & J.D.Stewart.

UNIVERSITY OF BIRMINGHAM

Institute of Local Government Studies

CORPORATE PLANNING AND MANAGEMENT ORGANISATION

- R Greenwood

- J D Stewart

INTRODUCTION

Local Government has become conscious of the need to integrate its activities. In part this is the result of the Report of the Committee on Management of Local Government, set up at the instigation of four local authority associations in 1964. The Report of the Committee, published in 1967, was critical of the fragmented nature of local authority management:

> "There is a long tradition of associating a particular committee with a specific service and this is hardened by the requirement of statutes that for certain services specific committees should be set up. The power which local authorities have (under section 85 of the 1933 Act) to delegate their functions to committees is a convenience for a council and indeed is often regarded as necessary forthe transaction of business. But delegation disperses direction and control amongst a number of separate committees. There exists therefore in local authorities in this country an organisation which is based on separate parts in each of which there is gathered the individual service, with its professional departmental hierarchy led by a principal officer and, supervising it, a committee of members. There may be unit in the parts, but there is disunity in the whole".[1]

The findings of the Committee have been confirmed by management consultants engaged to study the organisational arrangements of particular authorities. McKinsey and Company concluded from a six month study that Liverpool :-

> "In common with many other local authorities, finds itself with an organisation and system of making decisions that has changed little since the present structure of authorities was created out of the tangled web of local boards and functional administrations in the latter half of the 19th century. The democratic forms of Council and committee and the rigid hierarchical structure of the service have some great strengths, but in many ways they are not geared to the modern task of managing thousands of people and hundreds of millions of pounds of assets, nor to making complex, often technical decisions on the deployment of these assets. The city has neither the organisation structure, nor the planning system, nor the management methods commensurate with the job".

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1. Committee on Management of Local Government. Report: Vol.1 (1967) p.26. H.M.S.O.
McKinsey and Company Inc.,"A New Management System for the Liverpool Corporation" (1969) pp 1 - 2

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The Committee on Management recommended that local authorities adopt a more co-ordinated approach to the management of local services and put forward proposals for structural reorganisation - in particular, the committee recommended that local authorities establish a 'management board', and appoint a 'Clerk' with chief executive officer style responsibilities.[3] More recently there has been a growing concern for co-ordination through systems of corporate planning. The concern is reflected in the considerable interest shown throughout local government in a programme, planning, budgeting systems approach to management. Butt, in a survey of developments, found "an avalanche of interest and commitment" and felt that PPBS "have become cult words in British Local Government".[4] The search for corporate planning is also reflected in the growing number of "community plans" or similar documents prepared by local authorities. The purpose of these is illustrated by the following extract from the introduction to the Lambeth "Community Plan 1971-1976":

> "The demands upon local government, particularly in an urban society, are ceaseless. More and better social services; improved housing, a more attractive environment; improved transportation facilities, more opportunity for cultural activity and recreation; the very range and disparity of the demand can be frightening, as indeed can be the consequent demand in terms of financial and physical resources. And it is a corollary, if a seeming paradox, that the more these demands are met so will the need increase to restrain and rationalise public expenditure. Lambeth's Community Plan seeks to do three basic things. First, it seeks to bring together all related activities within each field of the Council's services. Secondly, it seeks to set out just what the Council is doing in each field, why it is doing it and what it costs. Thirdly, it seeks to set out the Council's objectives in the short and long term for the development of services, as at present foreseen".[5]

Emphasis upon systems of corporate planning does not exclude concern for structural reorganisation: corporate planning should be supported by an appropriate form of organisation, although the latter does not guarantee development of the former (as was implied by the Committee on Management). Views on the characteristics of an appropriate form of organisation, however, differ, in part reflecting different views upon the requirements of corporate planning. It is proposed in this paper to describe and examine two forms of organisation; one based upon the recommendations of McKinsey and Company Inc., for the city of Kingston upon Hull; the other based upon changes introduced in the City of Coventry. It is the formal structures that are examined, rather than the actual operations within the structures.

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3. Op.cit., pp. 41-48
4. Butt R. "PPBS in British Local Government" P.A.C. Bulletin (November 1970) p.43.
5. "An introduction to the Lambeth Community Plan 1971 - 1976 (1971) p.1. London Borough of Lambeth.

TWO FORMS OF ORGANISATION

Hull County Borough

At Hull the Council engaged the services of McKinsey and Company Ltd., to advice upon the overall management arrangements of the authority. The consultants identified "three important limitations" in the Corpration's ability to carry out its task effectively -

- It cannot decide on priorities among competing claims for scarce resources

- It has difficulty in developing effective programmes to solve problems.

- It cannot always ensure efficient and effective action even when decisions are made.

The consultants made the following recommendations:

"1. Recommendations for member structure

"We recommend the appointment of a 1-party policy committee to co-ordinate the activities of seven programme committees, which should include members of both parties, would assume responsibilities for services that have common basic objectives. Specifically, one committee would be responsible for each of the following groupings: education, social services, technical services, industrial development, housing, environmental services and recreational services. Five functional committees - for personnel, development control, management services, civic affairs, and parliamentary affairs - would assist the Policy committee in its co-ordinating activities .....

2. Recommendations for executive co-ordination

An executive office should set up to assume the present responsibilities of the Town Clerk's and City Treasurer's Departments, and most of the responsibilities of the Town Planning Department. The Office should also take on the additional functions of corporate planning. Leading the Offices should be a triumvirate of officers holding the posts of Town Clerk, City Treasurer and Director of Community Planning. One of these officers should be designated chief executive and the other two deputies. In addition, an Officer's management group should be set up, composed of the members of this triumvirate plus the heads of the major programme directorates.

3. Recommendations for the departments

Seven programme directorates should be established, corresponding to the programme committees. The Social Services, Education,

Housing, and Industrial Development Directorates should be fully integrated under thier programme directors. The Directorates for Technical Services, Environmental Services and Recreational Services should be only partially integrated. Each Directorate would be responsible for developing a programme for improving the services under its control for 5 years ahead, and these programmes would be combined into a community plan for the City by the Community Planning Division of the Executive Office.

4. Recommendations for management processes.

Our fourth set of recommendations are concerned not with organisation, but with procedures. We recommend that greater use be made of the techniques of project management, rational analysis of needs, analysis of major policy issues, and of coherent financial planning"[6].

The organisational structure is summarised in diagrams 1 and 2. At the committee level the primary concern of the consultants was with problems of resource allocation between sercices that have no obvious common denominator. To overcome this problem a hierarchy of choice was proposed: thus at the highest level the policy committee, advised by the five functional committees, would allocate broad sums of expenditure between the seven service committees, which in turn would allocate resources to the service within their terms of reference. To facilitate this descending process of choice, committees were made responsible for services serving a common objective. For example:

> "Recreational services is one example of a programme area, since it brings together all the activities relating to the leisure needs of the public. The programme committee in charge of recreational services would be responsible for determining priorities in that area by assessing the needs of one leisure service against another, say swimming pools against playing fields. The Policy Committee, on the other hand, will be concerned with priorities at a higher level - i.e. assessing one programme area against another, say recreation against education".[7]

The consultants found it necessary to allocate responsibilities at the departmental level in a manner consistent with that adopted at member level. For, although they admitted that the programme planning concept (the arranging of activities according to objectives in order to facilitate choice)"applies first and foremost to the organisation of committees", it was felt that

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6. McKinsey and Company Inc., "HULL - A Turning Point" (March 1971) pp ii - iii.
7. McKinsey and Company Inc. Op. cit. p.2-7.

"the same principles should be extended to the organisation of departments, so that committees and departments may be organised in a one-to-one relationship. Such an arrangement will ensure (1) committees receive consistent and coherent advice on the formulation of policy, and (2) the body responsible for policy also has the authority to see that policy is implemented effectively". The responsibilities of the programme departments were carefully defined in order to remove the duplication of effort that had existed under the previous system "as a result of poorly defined responsibilities".[8]

Coventry County Borough

An alternative form of organisation has been established at Coventry. It is incomplete because preparation and development came from within the authority. The following description is of a transitional position in an "evolutionary process .... based upon past achievements and progress stretching over a number of years."[9]

The Council operates through thirteen service committees: administration, education, estates andgeneral purposes, finance, general works, housing, international friendship, planning and development, public protection, recreation, social services, transportation and highways, health. At the Centre of the committee structure a policy committee (a development of the "policy advisory committee" established in 1938)[10] had its terms of reference re-drawn in 1967 "with the general objective of enabling the Council 'to study the physical and social environment of the City as a whole, to assess its future needs and to lay down the major objectives, reconciling one with another and determining their priorities"'. The major differences between the Hull and Coventry forms of organisation, however, are at the departmental level; in particular, at Coventry:-

- there has been no centralisation of functions within the departments of the chief executive officer. Instead the

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8. This ordering of functions between departments according to objectives is similar to the departmental changes carried out by the Conservative Government. For example: "government departments should be organised by reference to the task to be done or the objective to be attained, and this should be the basis of division of work between departments...."(Cmnd. 4506 para 8 p.4). It is debateable whether the allocation of purpose) will necessarily secure all economic advantages in the provision of services. Allocation of responsibilities to facilitate planning (the principle of the Hull committees reorganisation) does not necessarily lead to optional implementation. A similar criticism is made by N.Johnson of the reorganisation of central government. (Public administration 1971)

9. The quotations referring to Coventry County Borough are from documents not available in published form for general circulation so footnotes will be given to these quotations.

10. Hodgkinson G. "Sent to Coventry", Pergamon Press (1970)pp.130-145.

chief executive officer[11] has chosen to operate without departmental responsibilities, except for limited secretarial assistance and the services of a single senior officer in order to emphasise his intention to work through a "chief officer's team" composed of the senior heads of department. The team meets weekly under the chairmanship of the chief executive officer. It considers items of policy, prepares advice for the service committees as well as the policy committee, and submits to the latter recommendations for the annual revenue budget and the capital programme. These formal meetings are supplemented by less structured daily meetings open to all heads of departments, at which officers are expected to "identify problems which are likely to arise so that arrangements can be made for dealing with them.....pass on to each other the germs of ideas....keep each other informed of (their)movements and .....clear many of their minor items which require consultation".

The lack of centralisation is reflected in the organisational location of three 'resource units' within the separate departments of the city treasurer, city architect and planning officer, and the associate town clerk. These units advise the chief officer's team upon "the demand and availability of their particular type of resource (i.e. finance, land or manpower), not just in the short term of the next year or even five years, but also in the longer term of up to 15 years".

- there has been no attempt to reduce the number of departments through amalgamation or the appointment of directors. Instead, the Council have retained the existing range of departments as the basis of their organisation, without necessarily accepting that the distribution of responsibilities is correct and will remain unchanged. A network of inter-departmental teams has been superimposed laterally upon the functional organisation for purposes of co-ordination. Inter-departmental teams are of two main types - programme area teams, responsible for consideration of the impact of existing and alternative courses of action upon the objectives of the local authority (there are nine teams, each concerned within of the following objectives - education; community health and well-being; public protection; provision of housing accommodation; transportation; leisure activities; commercial and industrial development; physical environment; general support); and programme implementation control groups, responsible for large-scale capital projects that require inter-departmental co-ordination. There are seven groups, concerned respectively with housing, education, transportation, main drainage, the central area of the City, land assembly and general.

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11. The chief executive officer's chief roles were defined in his conditions of appointment as: "(a) the initiation and integration of the staff work of (the Council's team of principal officers) to enable the Council to make optimum use of its expertise in determining its policies;"(b) the general management of the Council's administration and the coordination or integration of inter-departmental effort".

Programme area teams and project control groups are composed of senior officers (not necessarily of head of department status) drawn from several professional departments.[12] Project control groups are co-ordinated by a programme implementation group. The programme area teams report directly to the [illegible] officer's team.

The Coventry organisational structure is summarised in diagram 3.

DISCUSSION

For conceptual purposes it is possible to characterise the above descriptions asrepresentative of two 'types' or forms of organisation.[13] Hull tends towards a hierarchical or monocratic form of organisation: Coventry tends towards a matrix form of organisation.[14] The former places considerable emphasis upon the achievement of co-ordination through the authority structure: it is characterised by the centralisation of authority at the departmental level, culminating in the location of strategic planning responsibilities within the executive office. Coventry, while using the authority structure, also emphasises lateral relationships structured around inter-departmental groups: the organisation is characterised by the diffusion at the departmental level of both authority and strategic responsibilities.

12. Each programme area team and project control group is 'chaired' by a chief officer, and members of the team or group are of third tier status or above.
13. Although the consideration of 'types' is useful for conceptual purposes it is a less feasible exercise in practice. Local authorities probably require a position that incorporates features of both approaches to management organisation. (For a discussion of the drawbacks of 'types' see J.Childs, "More Myths of Management Organisation", Journal of Management Studies, October 1970).
14. Matrix organisation, in the present context, refers to an organisation structured according to more than one dimension. At Coventry professional skills are the basis of the departmental organisation, (although not all of the departments are 'pure' functional types) with a second basis - project task - super-imposed upon it. The multi-dimensional structure is in sharp contrast with the unit of command erected within the hierarchical (monocratic) structure established at Hull. Further discussion of matrix and monocratic structures is presented in F.A. Shull et al "Organisational Decision Making" McGraw Hill (1970); and D.I. Cleland and W.R. King "Systems Analysis and Project Management" McGraw-Hill (1968).

It may well be argued that neither authority carries its point of view to extremes. Nevertheless, the distinction can perhaps be used to contrast the relative weaknesses and advantages of matrix and monocratic structures in the development of corporate planning in local government. For this purpose the remainder of this paper is divided into two sections: the former suggests characteristics that might be expected of an organisation designed to sustain a system of corporate planning. The latter, which is further sub-divided, places the discussion within the local government context. It should be borne in mind that both Coventry and Hull were primarily concerned with reorganisation at the senior levels of the local authority, and that the following discussion is of the form or organisation required for corporate (strategic) planning. Other structural features may be required for operational activities normally pursued at lower levels within the organisation.[15]

Corporate Planning

Corporate planning is based upon the assumption that local services should not be considered in isolation but as elements in a programme structured to meet the social, economic and physical circumstances operating within the local authority environment; it further assumes that the programme should be prepared upon an understanding of the critical and salient relationships within these circumstances, and of the synergistic impact of local services upon them. The task of the local authority that accepts corporate planning in this sense, clearly outstrips existing knowledge. This paper assumes, therefore, that the form or organisation required to sustain a system of corporate planning will be characterised by high innovative capacity and flexibility.

Organisations that emphasise the authority structure are not usually associated with high innovative capacity or with the

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15. Our use of the concept 'corporate planning' in local government is consistent with Anthony's definition of strategic planning: "the process of deciding on objectives of the organisation, on changes in these objectives, on the resources used to attain these objectives, and on the policies that are to govern the acquisition, use, and disposition of these resources." R.N. Anthony, "Planning and Control Systems: A Framework for Analysis".

ability to adapt easily to changing external circumstances.[16]

Argyris and Bennis have examined the incongruent position of the potentially creative individual within such an organisation and concluded that the 'dependency effect' created by a hierarchy of superior-subordinate relationships is inimical to creative expression.[17] Other writers have pointed to the threat of the 'ideas man' to both superiors and peers within an organisation that uses formal position and salary as the basis of its reward system, and Thompson, in particular, has indicated that the threa is more than outweighed by the ability of superiors to use the multiple opportunities afforded by the authority structure to vet proposals emerging from junior levels within the organisation.[18] Korman has suggested that emphasis upon career advancement within the authority structure encourages conformity to established procedures: "....creative expression from a subordinate can be considered to be an attack on the superior-subordinate assumptions of the traditional organisational model as it concerns technical competence, since it is a challenge to such competence and constitutes a form of aggression against it. It is obvious that such aggression is less likely to occur when the object of the

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16. There are two schools of thought of relevance here. One, following upon the laboratory experiments of Bavelas, has examined the influence of communication structures upon complex problem-solving, and concluded (sometimes inconsistently) that centralisation is not necessarily associated with poor performance. These findings are briefly reviewed by G.W. Becher and N.Baloof ("Organisation Structure and Complex Problem Solving" - Administrative Science Quarterly, June 1969). The studies cited in the above text, which are representative of a second school of thought, are more concerned with the ability and inclination (i.e. motivation) of individuals to put forward novel and imaginative contributions within the organisational rather than laboratory) setting.

17. Argyris C. "Personality and Organisation" Harper and Row (1957); W.G. Bennis "Changing Organisations" McGraw-Hill (1966).

18. Thomson V.A. "Bureaucracy and Innovation" Administrative Science Quarterly (June 1965)

aggression is someone on whom one is dependent."[19] Proposals for change involve the relative status of groups and a number of writers have traced the resistances of groups within established authority structures."20

Matrix organisations would appear to remove some of these structural constraints upon creative expression and change.21 Use of heterogeneous groups secures the diversity of inputs that are required for the diagnosis of complex problems, and places the individual in challenging situations where expertise rather than formal position is of greater importance. The individual is given a shared responsibility for the whole of the project rather than for a specialised part of it, and is encouraged to develop and adapt professional skills to meet the circumstances of the project. Matrix organisations reduce the importance of extrinsic rewards - money, formal status and position in favour of intrinsic rewards of task satisfaction and the esteem of professional colleagues. The effect, suggests Thompson, is that: "The interest in professional growth provides the rising aspiration level needed to stimulate search beyond the first-found satisfactory solution, and the perception of the organisation as a vehicle for professional growth harnesses this powerful motivation to the interests of the organisation in a partial fusion of goals. personal and organisational".22

These features of matrix (or group) organisation - use of heterogeneous groups, wider individual responsibilities, and emphasis upon professional esteem - encourage creative expression. Other features reduce the risk that creative expression will be rejected. Project teams counterbalance the development of in-group sentiments and resistances to change by offering other satisfying relationships that focus upon inter-group effort. The temporary nature

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19. Korman A.K. "Industrial and Organisational Psychology" Prentice-Hall (1971) p.93

20. Burns T. and Stalker G.M. "The Management of Innovation" Tavistock (1961): M. Crozier "The Bureaucratic Phenomenon" Tavistock (1964).

21. There has been insufficient research into the performance of matrix organisations to provide definitive conclusions: the above statements are therefore of alargely theoretical nature.

22. Thompson V.A. Op. cit. pp 11-12.

of project groups[23] prevent them becoming alternative sources of resistance. It is also more difficult for seniors within the administrative hierarchy to veto group proposals: "When a new idea is known and supported by groupings beyond the authority grouping, it is not easy to veto it. Multiple-group membership helps to overcome the absence of a formal appeal by providing an informal appeal to a free constituency of peers".29

These considerations suggest that a matrix form of organisation might be more likely to provide the conditions that will sustain a system of corporate planning (despite the strains found within such forms of organisation[25]) although it is not clear from the literature cited above whether the findings reported are acutely pertinent to senior levels within an organisation.[26] It would be wrong, nevertheless, to transfer the relevance of matrix organisation to local government on the basis of theoretical speculation, or from limited examples of its applicability elsewhere. Internal reorganisation of the management arrangements of local authorities has to take account of unusual and salient features of the local government system. The following features are considered below: the professional basis of the service; its emphasis upon 'production' rather than research; and the position of the elected representative.

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23. At Coventry the programme area teams are 'permanent' in that they have a persistent life-span, but they do not involve full commitment in terms of time from officers.

24. Thompson V.A. Op. Cit. p.14.

25. See, for example, Cleland and King. Op. Cit. pp.172-3.

26. Argyris (Op.cit) for example, points out that the frustrating embrace of the authority structure increases positively with lower levels of the hierarchy. More significantly Porter and Lawler's survey of the literature upto 1964, "demonstrates that organisational levels are strongly related to both attitudes and behaviour". (Properties of Organisation Structur in Relation to Job Attitudes and Job Behaviour" - Psychological Bulletin Vol. 64, No.1, 1965) p.31. The resistance engendered by group identification however in a setting of status adjustment is almost certainly pertinent to the above discussion, and was a central premise of the analysis of the Committee on Management of Local Government (op.cit).

I

Professionalism is the basis of the local government service. Not all of the 'professions' are of equal standing. Their common reference, however, is the professional association. Professional ("consmopolitan") identification is only in part the result of intensive professional education: it is reinforced by the process of career advancement through inter-authority mobility, and the use of the profession as a basis for departmental organisation. It is the latter feature that struck the Committee on Management:

> "On the official side, English local government is rooted in professionalism. Almost every service has been made into a separate profession, backed by a strong association catering for the training of its members and the development of the service....Departmental organisation reflects this approach. There is a separate department for each service. When a new service is needed a new department is usually set up".[27]

The importance of departmental and the professional autonomy usually associated with it is shown in the resistance to changes that are considered to reduce or remove that status. The slow emergence of the chief executive officer exemplifies this feature. The proposal of the Committee on Management that local authorities appoint a central co-ordinating officer as head of the authority's paid service, with "authority over other principal officers so far as this is necessary for the efficient arrangement and execution of the authority's functions."[28] was not original, although the Committee's concept of the officer's role differed from earlier suggestions.[29] The Committee itself noted similar recommendations put forward by the Royal Commission on Local Government (1929), the Committee on Qualifications for Recruitment, Training and Promotion of Local Government Officers (1934) and the Treasury O & M Review of Coventry (1953)[30] Nevertheless, despite these recommendations the position of the Clerk had usually remained on an informal basis. Only in recent years has the position of the Clerk as chief executive officer begun to take formal shape, and the movement is still not complete.[31]

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27. Committee on Management, Op.cit. p.18
28. Committee on Management, Op.cit. p.47
29. Greenwood R. et al. "Corporate Planning and the Chief Officers' Group" - Local Government Studies (Oct.1971)
30. Committee on Management Op.cit. pp.28-30.
31. Greenwood, R. et.al., "New Patterns of Local Government Organisation" Inlogov Occasional Paper 5A (1971) pp.41-56.

A survey carried out by the Institute of Local Government Studies into the management arrangements of local authorities during the 1969-70 municipal year indicated that of authorities covered by the survey only 49 had a principal officer who had been given formal authority (i.e. by explicit resolution of the Council) over other chief officers. Even in those cases where the position of the principal officer has been formally recognised care has usually been taken in drafting the principal officer's responsibilities to draw the limits of his authority explicitly outside the professional authority of other chief officers. Only a limited number of authorities have found it convenient or advisable to insert the principal officer's authority into the terms of reference of other chief officers (Table 1.)

Table 1.

Principal Officer's authority written into the terms of reference of	CC	CB	LB	All
All other chief officers	5	9	5	19
Some but not all	6	10	2	18
None	23	24	10	57
No answer	1	4	1	6
	35	47	18	100

It is against this background that the grouping or amalgamation or previously autonomous departments must be considered. The proposals at Hull are part of a wider movement towards a direct confrontation with the problem of fragmentation within the departmental structure.

The Committee on Management proposed the grouping of departments, possibly to about six in number.[32] A variety of approaches have been adopted in a number of authorities but this proposal has had less impact than the Committee's proposal for the reduction in numbers of committees. Professional resistance has been one factor in this situation. Even in those authorities where changes have taken place there have been difficulties experienced with professional associations or with the recruitment of professionals to senior posts.

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32. Committee on Management Op.Cit. p.58.

These difficulties are not in themselves a criticism of longer-term departmental amalgamation. They are problems, however, that have to be faced in an attempt to establish an acceptable new system of organisation in a relatively short period of time.

The approach adopted at Coventry avoids the direct threat to the status of the profession. It can therefore be more readily introduced than the monocratic restructuring implied by programme areas. This is an argument primarily in terms of immediate expediency. It would be wrong, however, to assume that expediency exhausts the advantages of matrix organisation vis-a-vis the profession. The above analysis of matrix and monocratic structures suggests that the former system creates opportunities for the integration of the profession into the larger organisation by opening up avenues for individual professional growth. Perhaps the weakness of monocratic structures is not their short-term irritation of professional status, but their emphasis in the longer term upon extrinsic reward systems that are relatively alien to the adaptive, innovative organisation.

II

It has been suggested so far that matrix organisation is appropriate for the development of corporate planning within local government because it is more usually associated with certain characteristics that are required for such a system of planning, is lesslikely to engender professional resistance, and harnesses professional motivation. It is debateable, however, whether matrix organisation will be fully able to counterbalance the strong centrifugal influence of the professional department, in local government.

The local authority is structured to provide ('produce') services that differ imperceptibly from those prepared for earlier years. Until recently there has been relatively little systematic research into the social, economic and physical circumstances of the local services (hence the movement for wider public participation). Partly, the production-bias is the result of the statutory framework within which local authorities are required to operate. It is also the result of unusual market conditions - the absence of competitive goods or services to indicate consumer preferences, considerable (although not necessarily critical or preferential) demands for existing services, and the compulsory consumption of other services. It is reflected in the emphasis upon procedures to control resources to be used than upon examination of the results to be achieved. The principle planning vehicles of the local authority - the revenue budget, and the capital programme - determine the consumption of resources without indicating the anticipated benefits of expenditure in terms of their contribution to objectives.

To establish a system of corporate planning the production bias of the departmental structure has to be supplemented by structures that devote sufficient resources to strategic considerations. The approach at Coventry relies upon the commitment of individuals to the professional department and the project team: it means that to be effective the project team has to be considered by officers to be equal if not higher importance than the department. In the short-term this could prove difficult to achieve - particularly in view of the presentlimited commitment in terms of time given to the project group. Much of the literature cited above is written in terms of project groups with full-time commitment to a project: the department is abase to which members of the groups return upon completion of the task. Coventry is far from that position - programme area teams do not usually meet more frequently than on a weekly basis. This suggests that commitment, certainly in terms of time and therefore probably in terms of attitude remains to the department. In the longer term development of the matrix form of organisation may depend upon a realignment of operational responsibilities (undertaken within the department) to free members of programme area teams concerned with strategic planning.

III

The discussion in the preceding sections has concentrated upon the officer structure, primarily because it is at that level that the difference of approach between Coventry and Hull is most marked. The officer structure cannot be appraised, however, without reference to the implications of change within that structure for the role of the elected members.

It is beyond the scope of this paper to present a sophisiticated description of the functions of the elected representative. It is sufficient to note that they include two responsibilities - firstly, a responsibility for decisions that commit the local authority to explicit courses of development; secondly, a responsibility for supervision of the administrative organisation to ensure that decisions are acted upon, and without abuse. The former responsibility is generally understood as the policy-making function, the latter as the 'watchdog' function. Traditionally both functions have been secured through the same instrument - the service committee 'responsible' for a service department. The alignment of service committee with service department has enabled the elected representative to receive coherent advice from the chief officer (although that advice might be of limited perspective) and to hold that chief officer responsible for actions or decisions taken within the department.

A monocratic form of organisation follows the traditional arrangement. It therefore retains the simplicity of traditional lines of accountability and ensures that information to the elected representative is processed through a co-ordinating officer with a duty to provide "consistent and coherent advice". Matrix organisation, on the other hand, confuses the position of the elected representative. It provides several possible sources of information without locating one officer to draw together possibly conflicting advice. It also denies traditional lines of accountability, which could lead to points of strain if elected representatives insisted upon holding chief officers responsible for actions taken by members of the department in their capacity as a member of a programme area team.

The development of matrix features could therefore depend upon the willingness of the elected member to work through new and possibly confusing systems of information, in which the member is less concerned with the source from which information is deirved than that it comes. In some instances information could be reported by a group rather than by an individual. An example of this is the chief officers' group reporting to the policy committee. It is by no means that members will be prepared to loosen their close reliance upon the chief officer as the primary and unitary source of advice. The development of matrix features could also depend upon the willingness of members to separate responsibility for the taking of decisions from that of administrative supervision. The traditional instrument of accountability, the service committee, may have to be replaced or supplemented by committees of inquiry similar to the select committees of the House of Commons. Again, it is by no means certain that members will prefer or find it easy to divorce policy from supervisory activities. On the other hand, the long association of members with matters of detail rather than with broader areas of policy, could make such a separation a useful disciplinary step to force members of committees with policy concerns to focus upon policy.

CONCLUSIONS

The above analysis has characterised two approaches to the internal reorganisation of local authorities. Both approaches have a common purpose - the introduction of corporate planning across the activities of the local authority. One, illustrated with reference to Hull, includes features that resemble a monocratic form of organisation. The other, illustrated with reference to Coventry, includes features of a matrix form of organisation. Although theoretically it might be expected that the latter form of organisation would be associated with the high innovative and adaptive capacity required of a system of corporate planning, both forms of organisation have advantages

and weaknesses within the context of local government. A monocratic form of organisation is likely to ensure that sufficient resources are devoted to the new planning system: and preserves the existing organisational position of the elected representative. A matrix form of organisation is likely to integrate the profession within the new planning system thus reducing (or removing) the likely source of critical resistance. The possible strengths of one system, however, are the probable weaknesses of the other.

Further researches are required before the weaknesses and advantages of matrix and monocratic structures in English local government will begin to be understood. It is possible that the Bains' Working Group on Management Structures will add to the present debate. In the absence of systematic researches it is worth noting the opinions of F.J.C Amos, City Planning Officer of Liverpool C.B., an authority which was re-structured along monocratic lines upon the advice of McKinsey and Company Inc.:

> "The essential need is to create a structure in which there can be a high degree of professional competence, coupled with flexibility of operation. Perhaps the best way of achieving these two qualities would be to maintain (or establish as necessary) departments of professional competence, but separately to create programmes and project directorates which would devise and manage programmes to achieve specified objectives.
>
> Such directorates would commission services from departments but would themselves be transitory; being formed when an objective was identified and being disbanded when it was achieved or radically changed or if the staff proved to be inadequate. The members of staff involved in directorates would be small and their skills, in addition to planning and management would vary according to the objective.

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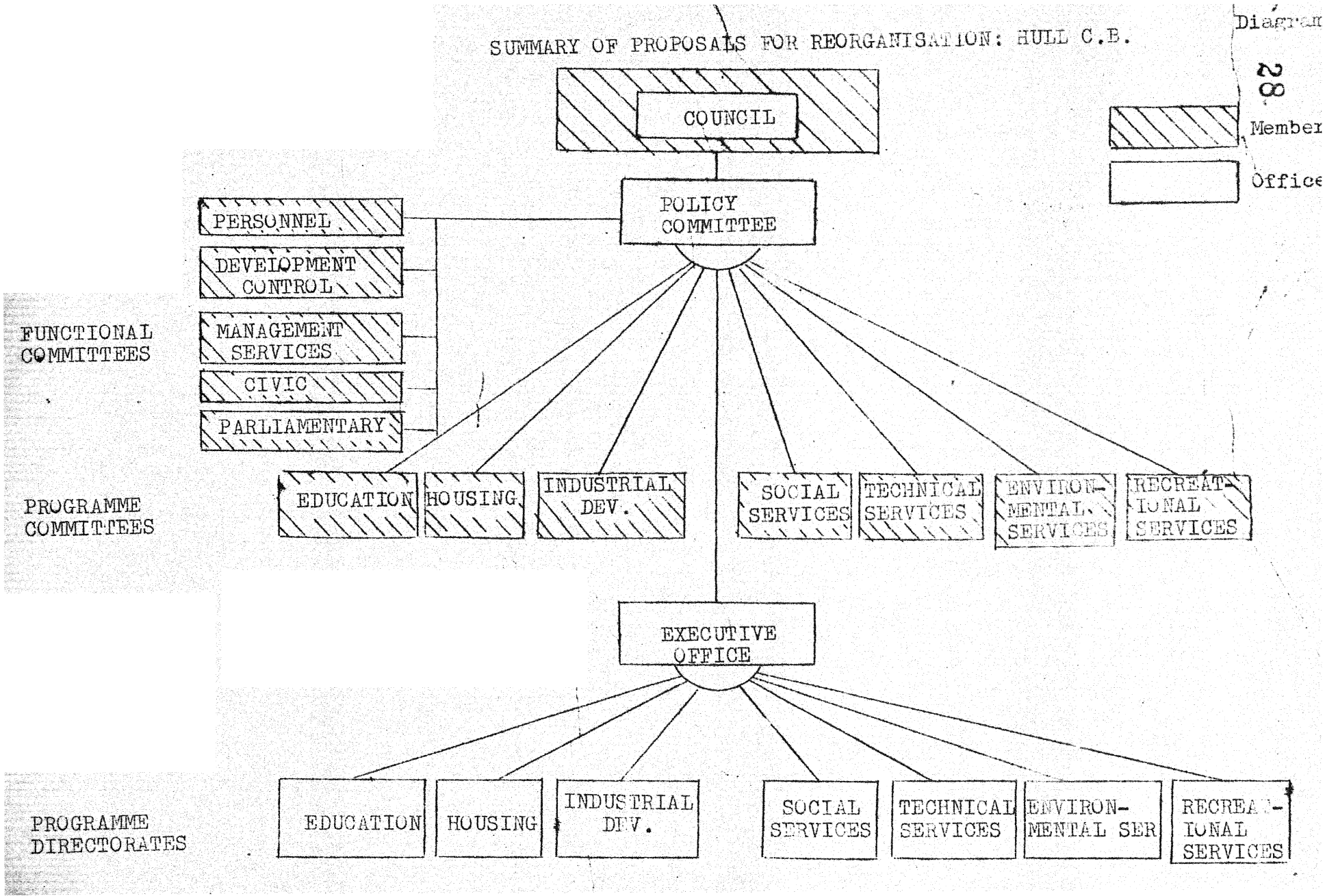
1. F.J.C. Amos "Planning strategies and implementation" Town and Country Planning Summer School, Southampton 1971. p.5.

Diagram 28

SUMMARY OF PROPOSALS FOR REORGANISATION: HULL C.B.



Restricted - Not for circulation.

Management by Objectives in Local Government

It is on the objectives of the individual that management by objectives focuses mostly. It is sometimes known as 'performance planning','improving management performance' or simply MBO-here it will be called management by objectives throughout.

Even at the risk of being over-cautious it is important to realise at the outset that management by objectives, like any other approach or technique, is not magic, it is not an instant remedy to management problems. Given reasonable conditions, which will be set out later, it merely creates an improved framework within which departments (or sections of a department) can work. It is an attempt to introduce system into what is often being done already, albeit perhaps in a crude fashion. What will be clear is that there are real or potential pitfalls and difficulties and there could well be disadvantages in introducing it, whether to a local authority as a whole or to one specific part of it. It will be apparent that it is easier to operate in some fields than others, that it relies to a degree, as does PPBS, on measurement, on quantification which is not easy-some would say impossible in many aspects of the public sector's work. But again, as with PPBS, the difficulty of measurement or evaluation is often erected as a reason for not attempting it. This has its dangers and so of course does the converse, i.e. of introducing spurious accuracy in a field which is rightly the field of political values.

Although we shall lay considerable stress on measures and indicators, it is intended to show here that provided there is an awareness of the possible dangers, provided

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This is taken from Tony Eddison, Local Government Management and Corporate Planning, 1973. (ch.10).

the approach is introduced sensitively, then there are considerable advantages to be reaped from it at all levels and for all sizes of authority or agency. Moreover it need not be introduced as a whole system - some of its more basic approaches may be applied or adopted with little or no trouble and certainly with no added expense.

The purpose here, then, is to explain management by objectives, to expose its limitations and to give some constructive guidance on how it might be applied in local government and the public sector generally.

RELATIONSHIP BETWEEN PPBS AND MANAGEMENT BY OBJECTIVES

As we have seen a Programming Planning Budgeting system casts a framework for policy planning and it has as one of its major elements the programme structure, the hierarchy of objectives of the local authority, beginning with the wide objectives and progressively narrowing on moving down the hierarchy. Often the distinction between 'objectives' and 'means' is a blurred one. Clearly what at one level is an objective can be seen as a means from another point. The usefulness of the objective as a tool in PPBS or in management by objectives is that it relates one activity or operation at one level to a higher level. There can be no hard and fast definition of the relationship between PPBS and management by objectives, nor indeed of the relationship between objectives and activities. There can only be a variety of ways of looking at and using these relationships and, depending on the purpose of the interest, some are more helpful than others. If PPBS is regarded primarily as a thinking framework, for planning and control, then it is perhaps more helpful to see management by objectives as operating more at the implementation end of the scale.

Thus there is a series of different levels:

(a) the local authority or agency objectives;

(b) the departmental or sectional objectives derived from (a);

(c) the individual officer's most important tasks in securing or making his contribution to (b) and hence (a).

Perhaps a further stage could usefully be distinguished involving the review and feedback element: clearly all four are related and interdependent. Progress through one affects the others both upwards and downwards and to greater or lesser degrees. Management by objectives, in the model presented here, has its greatest impact in the area of the individual but with ripple effects to other areas. Few of these approaches or techniques have clear boundaries and in fact attempts to erect them will very frequently undermine their value-it is the relationships between them that are often important rather than their separate characteristics. Management by objective can be seen as something separate and can be treated separately from PPBS but it is much more useful when it is seen as an extension or even a part of PPBS.

THE SPIRIT OF THE APPROACH

The consideration of the relationship between management by objectives and PPBS has concentrated on the two as thinking frameworks. However, there is an important element, particularly in relation to management by objectives, which needs treating with perhaps more care, understanding and attention. A common enough comment from those who are cynical about management teaching, management techniques or innovation in this field generally, is that new approaches, new thinking and so on, are all right but 'people' are more important- 'people' have to work the system- 'you have to take personalities into account'. The comment appears in a variety of forms. It is a familiar enough comment and of course it is fully justified, but only if the comment is seen as a starting point for understanding people-for understanding human behaviour and the implications, in a behavioural sense, of the new approaches. Too often the comment is made to avoid the issue, as if by recognising in words that people are important that practice authomatically embraces and enhances that importance, which is not the case. The whole field of human behaviour in organisations is a vitally important one. We are not pursuing it here except in non-specialist terms and in so far as it relates to management by objectives. One cornerstone of management by objectives is a participative or democratic style of management. This is based on the theory that;

"1. The expenditure of physical and mental effort in work is as natural as play or rest. The average human being does not inherently dislike work. Depending upon controllable conditions, work may be a source of satisfaction (and will be volunatrily performed) or a source of punishment (and will be avoided if possible).

2. External control and the threat of punishment are not the only means for bringing about effort toward organisational objectives. Man will exercise self-direction and self-control in the service of objectives to which he is committed.

3. Commitment to objectives is a function of the rewards associated with their achievement. The most significant of such rewards, e.g. the satisfaction of ego and self-actualisation needs, can be direct products of effort directed toward organisational objectives.

4. The average human being learns, under proper conditions, not only to accept but to seek responsibility. Avoidance of responsibility, lack of ambition and emphasis on security, are generally consequences of experience, not inherent human characteristics.

5. The capacity to exercise a relatively high degree of imagination, ingenuity, and creativity in the solution of organisational problems is widely, not narrowly, distributed in the population.

6. Under the conditions of modern industrial life, the intellectual potentialities of the average human being are only partially utilised." (10.1)

A system of management by objectives, as well as resting heavily on this theory, also relies on a freeing up of relationships between subordinate and superior. It demands a frank, critical dialogue between individuals in this relationship and also generally throughout the department or organisation it which it is being applied. The object behind this is to produce constructive information which in turn goes towards the improvement of performance, of individual officers, of groups of officers

and even the whole department. So often in any organisation peers will raise, discuss, and complain to one another about the shortcomings of the organisation but all too often the complaints are never put to anyone who is in a position to take action to all-eviate the problem. Conversely, an officer may be conscious of, even worried about, some weakness or failing in one of his subordinates but avoids discussing it with him when in practice this may well be the opening up of the way to a remedy. Is it kinder to leave a man ignorant of his weaknesses in his job or to tell him about them? There can be no rule laid down- it will vary, but if the atmosphere is created where criticism, both up and down, is commonplace, is not the exception, then the task is easier-it has a meaningful framework. The system, of course, cannot, or at least should not be imposed without some appreciation or awareness of the problems which are likely to arise in this area. Everyone involved in the system will adopt his own approach-some exchanges will indeed be frank and free-others will stop short at points, determined in the privacy of the minds of the individuals concerned-others will be very restrained. The important point about the frank exchanges is that they are purposive and systematic. One-off frankexchanges are of very doubtful value and it is questionable whether they are very frank. Many officers convince themselves that their is an 'ever open door' -the comment that 'people can come to see me any time' is common enough and belies the true state of affairs. Other officers convince themselves that by building up a sense of camaraderie they effectively construct frankcommunication channels. Perhaps communication is improved but it is unsystematic and hence biased and unreliable. But in any event almost all communication is sieved either by the 'transmitter' or by the 'receiver'.

Criticism in these exchanges is not the complaining kind, it is not punitive, but the kind which examines critically the work of each individual and the conditions and environment in which he has to do it. The spirit is more easily talked about than captured, but its importance for the success of management the objectives will become increasingly apparent as we move on. The relationship, however, can be seen as a dynamic one-that is to say, management by objectives requires the participative management style as a basis but itself may well induce it.

KEY TASKS

Despite the classic jokes about the tea-drinking public servant, it is mostly true to say that he is an extremely busy man, often overwhelmed day to day by a host of time-consuming, sometimes unpredictable activities, many of which cannot really be said to be central to his job. Perhaps only about one-fifth of a manager's activities are crucial to the achievement of his main work. The rest of the activities may be essential in the sense that they have to be done by someone, but they are only peripheral to the particular manager's job. In other words, if the object is to improve the performance of the department through improvements in the individual's performance, then it is on these key activities that attention should be focussed. The first step clearly is to identify these key tasks-perhaps five or six of them, are those tasks upon which his contribution towards departmental objective depends most. For the officer concerned, and of course for the department as a whole, it is more important that he achieves reasonable standards of performance in these areas, rather than excel in those activities which are purely marginal. The identification and subsequent analysis of these key tasks is one of the important features of management by objectives.

A helpful way of arriving at key tasks is for the officer to list his activities or jobs, and subsequently group them into five or six key tasks. It should not stop here, however. Merely considering present activities is insufficient-it spells stagnation. The key tasks must be looking to what should be rather than what is.

KEY TASKS ANALYSIS

The identification of an officer's key task is not necessarily simple, but even when it has been done it is of limited value in isolation from the key tasks of other officers in the same department or section. Clearly there is a relationship between the key tasks

ersonnel within the

of all personnel within the department- their key task should interlook and the relationship could be explicit. The aim should be to achieve a fully integrated set of tasks compatible with those of departments as a whole. The importance of relating the tasks of one officer with those of his superior and his subordinate is perhaps self-evident but it can be thrown into sharper relief when one compares the view of what, for example, a Chief Officer regards as his own and his deputy's key tasks with what the deputy sees as his own and his chief's key tasks. The results of the comparison can be revealing (and embarrassing). Only when tasks throughout a department are integrated can the system begin to be useful.

In the first instance the process of key tasks analysis is undertaken by the individual officer himself by defining his own key tasks. Having established to his own satisfaction what are his key tasks the officer himself then attempts to identify or suggest his results to be achieved or the standard of performance in relation to each key task. What we are seeking here is some indicator by which an officer can judge to what extent he has been successful in achieving or completing his key tasks. These will take a variet of forms. The standard will sometimes be a continuing one. For example a treasurer responsible for payment of wages and salaries may be expected to have inaccuracy in no more than one payment in five hundred. This type contrasts with the target where an officer establishes a time within which some particular project shall be completed - a project which is distinctive and not likely to be a regular feature of his job, at least not in the same form. An example might be an architect required to complete designs for a particular project by a certain date. Wherever possible the results should be quantifiable. This is easy to say and not so easy to achieve. It should be possible however, to give a conveyancing solicitor, for example, some guidelines as to what is a reasonable turnover of conveyances. True, there will always be the awkward case which may take many weeks or months but this does not deny the underlying pattern of turnover. If the task is to deal with conveyances speedily then a guideline can be acceptably set. On the other hand, speed is not always the most crucial factor with conveyancing- there are many occasions when it is irrelevant. Obviously each task has to be probed in this way to uncover useful standards. There are obvious dangers in striking false measurable standards. An absolute measure is more often than not impossible- spurious measures may be invented which in the event are possibly counter-productive. As much as anything else the individual officer needs some helpful indication which he himself may use to judge his performance against the tasks he has identified. Any measure which fulfils this function is a good one. In most cases there will not be one single measure but a range of measures or indicators related to each key task. It is the combination of measures which

will most frequently give the officer the information he requires be requires to judge his own performance.

Speaking in general terms about measurement, e.g. identifying pitfalls, sounding notes of caution is relatively easy but in practice not much has been done in the public sector and certainly nonthing that is entirely satisfactory. In Figure 10.1 an attempt has been made to draw up a model of a Chief Officer's key tasks performance indicators. They are discussed in more detail later but are perhaps a useful reference point at this stage. It is important to realise that these are a Chief Officer's key tasks which differ in the degree of specificity from an example at a lower level.

Apart from the test of usefulness which we have mentioned, there is another crucial factor which may determine the validity of a standard of performance and this is the availability of control information. Obviously if there is no way of telling how long individual conveyances take to complete, there is little point in adopting a turnover standard for the conveyancing solicitor - he has no information. The question has to be asked, 'If the information is not available, can it be made available and if so, at what form, or if it is control information he requires is available and in what form, or if it is not available, what he requires, how he sees it being collected and so on.

The final component of the key tasks analysis is a statement of what action he, the individual, can take to improve his performance, the action he thinks his superior should take and what other steps he feels might be taken possibly at a higher officer or member level towards the same end. Some examples of the sort of action involved here may help to illustrate the point. The development control planning assistant may agree or reorganise a whole series of procedures in his office to speed up part of his work. This he can do himself. He may also, however, want to reallocate work such as the plotting of planning applications or the answering of land charges as between members of staff the same section or he may want to have better or different typing arrangements, all of which may require action by his superior.

The sort of thing which would require action at a higher level than his immediate superior might be the appointment of additional staff, the purchasing of new equipment or the adjustment of his areas for development control purposes. Other factors which might appear here, the exposure of which, like all the rest, should be encouraged, are things like an expression of the need for some form of additional training or guidance. For example, some officers have difficulty with report writing. Another possibility is inadequate authority or some other limitation or problem which affects the officer's performance.

Each authority and department will have its own ideas and needs in this respect-the examples are given as guides. The important thing is that the system actively induces officers at whatever level to give consideration to their working environment in a wide sense and to suggest ways of improving it relative to the achievement of his key tasks. In practice it may be helpful to use a standard form to assist the officer in undertaking his own analysis.

So far the analysis has been carried out by the individual officer himself. It now needs to be discussed between him and his superior who will have been analysing his own tasks. Their discussion will be structured under various heads and making mutually agreed changes, they will eventually establish for the subordinate:

(a) The key tasks.

(b) The results to be achieved.

(c) The control information which it is reasonable for the officer to have.

(d) (i) The suggestions the officer has made for action he can take.
(ii) That which the the superior might take.
(iii) The items for action at a higher level.

At the end of this process of analysis each individual officer has his plan of action for the period ahead, usually about six months or so- it is known sometimes as a Job Improvement Plan-complete with the agreed supporting action of his superior.

JOB REVIEW

A pre-requisite of any system such as management by objectives is a review procedure. This takes place after about six months from the operation of the first Job Improvement Plans. There is nothing magic about six months-in practice this is a convenient period and may be varied either way. The review comprises a discussion between the subordinate and superior with the management advisor in attendance and possibly the Chief Officer at a sample of interviews. The results or standards of performance set in the plan are discussed in relation to the control information. If the results set have been achieved the question of whether the standard should be set higher is discussed. If the results have not been achieved there is no recrimination or blame-rather it is used as an opportunity to find out why. In many cases, particularly at the first review cycle, it will result from on over estimate on the part of the individual as to what was a realistic target for him to achieve. There is a tendency always to over stretch. The approach, having discovered shortfalls in performance, is jointly to decide on remedial action.

The review stage is not only directed at the subordinate from superior level. It will be remembered that at the analysis stage, and subsequently in the Job Improvement Plan, action of varying kinds was agreed by the superior himself. In other words, to assist the subordinates in the achievement of his performance standards, the superior undertook certain supportive action. The review period examines his performance in respect of these.

Out of the discussion at the review stage will emerge.

(a) A revised set of results or standards of performance, some of which will remain, some stepped up, some revised downwards or even eliminated. In the first review period and may be at subsequent reviews the key tasks themselves may be seen to be ill-defined and they will be reformulated.

(b) Action to be taken in the next period to improve performance or assist improvement by
(i) the individual officer;
(ii) the superior;
(iii) a higher level.

(c) Some indication of appropriate training if this is necessary e.g. report writing, project control, or perhaps some specialist technique related to the post in question.

From these results the revised job improvement will be compiled and the cycle repeated.

DEPARTMENTAL IMPROVEMENT PLAN

It should be clear now how each officer's key tasks are closely integrated with those of his peers, his superiours and his subordinates and how these combine together to achieve the department's objectives. During the whole ofthis process will have emerged a range of items which seem to require action at a fairly high level, perhaps for the Chief Officer himself or may be a committee or even the Council. Any Chief Officer who is anxxious to keep his own department's performance will show close interest in these trouble-spots. These are the items which have been identified by his staff as impeding the work of the department. Some the Chief Officer will already know about, perhaps not in detail, but there will be a large number about which he is totally ignorant. Some will come as a shock. His reaction is extremely important. Many Chief Officers will instinctively blame the management by objectives system, other will try to rationalise the trouble and will choose to ignore what they have been told. The Chief Officer who regards it is important new information bearing heavily on the efficiency or effectiveness of his department will look at it critically. It should prompt in him questions which he will aks and will then result in his agreeing to take action on some of the points if not all of them. He will discuss this with the management advisor and out of these discussions will be produced the Departmental Improvement Plan. It will relate closely to the separate job improvement plans and will similarly have results to be achieved to it. Moreover it will also be subject to review.

Some management by objectives exercises begin with a Departmental Improvement Plan or at least begin by looking at objectives of the department and sections of it which results in this list of topics being put to the Departmental-head. It is the way some parts of the Greater London Council have operated. Its attraction is that in the first instance it does not focus on individuals but on groups or sections and insofar as it is impersonal it perhaps is more likely to command support and attention. On the other hand it can be seen as a way of avoiding the issue of the individual in his job which sooner or later has to be faced.

IMPLIMENTATION AND ITS PROBLEMS

At first thought it is tempting to write an instruction mannual as to how to go about implementing management by objectives but this would clearly be a waste of time. There are no 'off-the-peg' answers. What is useful, however, is to be aware of the many pitfalls and to understand some of the disadvantages and dangers.

The most obvious danger, and despite this the most commonly experienced one, is when the staff involved do not know what is happening, when they have no basis for understanding the system. Particularly for an approach like management by objectives, which has at its centre a strong participative element, it is vital that the staff know what it is all about. There are a variety of ways of doing this-films, lectures, case study exercises and so on. Whatever method is chosen all too often the explanation is too slick, too glib. It is presented as magic when it is not-the weaknesses are understressed and expectations are raised too high or the converse is the case, that resistance is high. A frank exposure of the difficulties likely to be encountered as well as the bald explanation of the system and its merits is much more useful to intelligent people than the 'hard sell'.

One of the most difficult aspects to explain, to justify and subsequently use is, not surprisingly, the measurement of performance. Performance standards will cause trouble not only because they are troublesome and difficult to establish but because some officers will stubbernly insists that their job does not lend itself to measurement. The warning to the management by objectives addict is that they are probably right. Advocators of management by objectives who press hard for precise, numerical measurement are probably doing a good deal of harm. We can only stress again here that a performance standard or a combination of standard

in whatever form, precise or a vague indicator, which enables an officer to judge his performance standard or a combination of standards, in whatever form, precise or a vague indicator, which enables an officer to judge his performance against his key tasks is a good one. This is one of the aspects which are most usefully stressed in the very early stages.

Because management by objectives relies on participation, on critical self-examination, on appraisal by working associates and on a free exchange, a large part of the staff must be committed to it and especially at the top. The potential strains here are enormous. There are possible strains associated with the role of the management advisor if one is involved, p especially at the point of the superior/subordinate relationship.

It is at this point too that another danger may be present. The whole system is participative and 'democratic' but at the same time, of course, it throws into stark relief the hierarchical nature of the organisation.

There are many situations, certainly in local government where, although a formal hierarchy exists, it is rarely at the forefront in the working situation. For example, in many architects' departments or in the social work field, in some planning offices, the group is the significant unit and to impose or make persistently explicit the underlying formal hierarchy may be a disadvantage. Here the system needs to be modified and attention perhaps focussed on the group rather than the individual.

It is so easy to become obsessed by the system itself that it escapes our notice that what we have done is no more than introduce a sledgehammer to crack a nut (and sledgehammers don't even do that very well). Clearly the degree of sophistication, the effort and resources devoted to it must bear a sensible relationship to the likely results to be achieved. The people to consult about management by objectives are the consumers not the ardent advocates. The system can so easily become the cuckoo in the nest. For example, it is quite easy to generate a form-filling-in procedure

which is time-consuming and counter-productive in that the officers filling them in may become blase, derisive or even bent on sabotage. The amount of control information and form-filling should be kept to a minimum. The system should ideally be set up to encourage the individual himself to want information for him to judge his own performance and to want to discuss it with his superior. Seen in this light, the system is much mere likely to be a success but again, success can only be judged insofar as those involved see it has been helpfulto them. If they do not, then it needs looking at afresh.

MANAGEMENT INFORMATION SYSTEMS

JAGDISH C. KAPUR

WHAT ARE DATA?

SET OF FACTS, FIGURES, STATISTICS

-may be unrelated
-may be uninterpreted
-may not have been organised
-may not add to our knowledge
-may not surprise us

WHAT IS INFORMATION?

Result or product of a process

Derived from data through one or more of the following

- collection
- organisation
- analysis
- summarisation
- extraction
- compression
- filteration
- condensation

Information is a piece of knowledge that contains an element of

- surprise
- uncertainty (Measure of Information)
- unexpected result

WHAT IS A SYSTEM?

Group or set or collection of elements which are connected in some way and directed to some purpose or objective

A system always exists within an environment that provides resources as inputs into the system and accepts the products or services as outputs of the system.

A system is always doing something i.e. it is designed to achieve something. It must ensure that the purpose for which it exists is accomplished.

Thus, a system has four basic parts

* Input
* Process
* Output
* Control

Which are interrelated and the system operates within an environment.

An essential relationship in all systems is the feedback loop which is designed as the means by which the system controls its own operations and takes corrective and preventive (for faults) actions so that the system functions in the proper manner to achieve its goals.

The control element measures and compares the actual output (performance) with the output needed or planned or expected for goal achievement.

The control element signals the input and process elements to
*continue operations (activities, steps) unchanged
*modify and then continue
*stop

The control element indicates whether the objectives (plans, forecasts, norms, targets) should be changed, inputs should be changed or things should be left to nature to take their own course of action.

A system could be an instinctive or automatic system i.e. self regulatory or self controlling system e.g. Human Respiratory System, Voltage Regulator (automatic transformer), Automatic Clutch, Gear and Speed System in a motor car.

OR

A system could be a Managed System Like an Administrative System, a business house, an industrial organisation, a Planning System.

WHAT IS MANAGEMENT?

* Selection of objectives
* Judicious allocation of resources
* Drawing operational plans and schedules
* Control progress and achievement by evaluating performance through feedback.

For managing, we generally carry out the following functions

* Planning
* Organising
* Staffing
* Directing
*Coordinating
* Budgeting
* Reporting

The process of management implies that decisions will be required

feedback on results would mean taking more decisions to modify alternatives, to reallocate resources, accept the course of action i.e. leave to circumstances or nature, postpone decisions.

WHAT IS A MANAGEMENT INFORMATION SYSTEM?

A Management Information System is an organised method of providing past, Present, and projection information relating to internal operations of an organisation and external intelligence.

MIS supports the planning, control and operational functions of an organisation by furnishing uniform information in the proper time-frame to assist the decision-making process.

A Management Information System is a group of people, A set of methods, procedures, manuals and data processing equipment(elements) that select, store, process and retrieve data(input) to generate information(output) in a meaningful form for Managers(Executives) and for environment at the time when it can be used appropriately effectively, and efficiently. The purpose of anmis is to reduce(control) Uncertainty in decision making.

Definitions of MIS imply that it will provide

* Timely
* Relevant
* Accurate information in a
* meaningful form

Which will enable management at all levels to make decisions aimed at optimising(achieving) goals of the organisation.

This information will be concerned with both

* The internal operations; and
* environment of the organisation.

LEVELS OF SYSTEMS WITHIN AN ORGANISATION

1. Strategic level
2. Tactical Level
3. Operational Level

The Strategic Level is concerned with

Long-term plans
Policy Matters
Goals and Objectives

This Level should respond to the needs of the environment like the Government and community (stockholders, competition, customers, suppliers also in the case of business/industrial organisations)

This Level should also respond to the needs of the employees at the Tactical and Operational Levels.

Strategic Level Provides the official communication link between the environment and the organisation through

Annual Reports
Press Releases

Statistical Reports
Tax Reports
Advertisements etc.

The Strategic Level also generates polices and procedures which determine the type and degree of interface between the other system Levels (Tactical and Operational) and the environment.

The Tactical Level

The Tactical Level is concerned with short-term plans, usually of one to three years' duration.

This Level translates the Long-term plans and objectives into general operational plans.

This Level coordinates the activities of the Operational Levels to remove ambiguities in understanding and interpretations, confusion in procedures, and attempts or efforts to work at cross-purposes.

The Tactical Level generates information needed by the Strategic Level and the environment through filteration and distillation of detailed reports received from the various functions at the Operational Level.

This level helps the Strategic Level in designing and accomplishing goals which are realistic, achievable, and long-term in nature.

The Operational Level

The Operational Level is responsible for carrying out the plans given by the tactical level.

This Level translates the short-term plans from general to the specific.

It utilises resources from the environment

It generates the output like gods, services, information

This level represents the actual interface with the environment.

RELATIONSHIP BETWEEN MIS? MANAGEMENT , ANE ENVIRONMENT

Information and data flow from the environment into the Management

Management formulates the objectives and plans and sets the goals, standards, norms (expected performance)

Information and data flow from the management (in terms of decisions, plans, forecasts, targets, etc) and from the environment (inputs and processes available, Government policies and procedures etc.) into the MIS

MIS (Computerised or non-computerised) process the inputs and provides outputs in the form of reports and documents to the different Management Levels and to the environment so that the objectives of Management and the environment are achieved.

WHAT TYPE OF INFORMATION SHOULD BE GENERATED/SUPPLIED

1. Information which creates need for taking one or more decisions about objectives, plans, targets, resources (inputs), processes, outputs, etc.

2. Information which represents feedback on decisions (particularly, performance). This would create need for more decisio s about the different courses of action open to the Management.

3. Information about the performance of a function, on which the performance of another function depends.

4. Information that measures the impact of decisions, either before or after they are made (About financial and human implications)

5. Information that measures the environment.

6. Information that reacts in an appropriate time frame, to enable us to learn of the development of potential trouble areas in time to take action.

WHAT REPORTS SHOULD BE GENERATED?

If a report does not have an element of surprise, why generate it or ask for it?
(create impression, showmanship)

" I want to know the facts about what is happening in the organisation"

Because the facts are too many and keeping track of them mean getting bogged down in day-to-day routine matters which keep the executive busy all the time.

Therefore no time left for creative work, for actual decision making.

SOLUTION

Ask for exception reports where
- actual performance deviates significantly from expected performance
- curative and preventive management action is suggested

Arrange for brain storming sessions of executives involved at different levels, the oucome of which should specify

- what is to be done
- by whom
- by what date
- report back

Create confidence and mutual trust about not reporting normal things.
- no news is good news
- lesser is the number of visits of your family doctor, the better the doctor he is.

PRINCIPLES OF PERFORMANCE BUDGETING

Prof. M.J.K. Thavaraj

1. Performance Budgeting is generally understood as a system of presentation of public expenditure in terms of functions, programs, performance units viz., activities/ projects etc. reflecting, primarily, the governmental out - put and its cost. In accordance with such a functional classification the term 'program' related to a higher level of organisation embracing a number of performance units; though at times, in the budgetary parlance, the terms 'Program' and performance budgeting have been used more or less interchangeably. In recent system of classification in terms of functions, missions, programs and program elements with a view to integrating planning and programming with budgeting.

2. The Program Budgeting System tends to highlight the need for clearly defined objectives; choice between alternative programs based on their cost-benefit implications; spelling out of the future cost repercussions of near-term financial commitments etc. In essence, program Budgeting emphasises the need for over-all program management in the light of long-term objectives. The keynote of Performance Budgeting, on the other hand, has been improvement of internal management on the basis of the volume of work to be accomplished (during a financial year) and its cost. Consequently, Performance Budgeting involves the development of more defined management tools such as work measurement, performance standards, unit costs etc.

3. In a Planned Economy, it is logical to think in terms of budgeting both as the nearest link in a well-integrated system of planning, programming and budgeting and as a tool of management, providing a system of information for decision-making, coordination, evalnation and control to appropriate levels of the organisation.

4. Besides favouring a "rolling" plan (as against 'terminal' five or six-year plan) an integrated program budget would demand a clearer expression of national programatic goals, formulation of alternative programs with the delineation of their cost and output streams, choice of programs as well as the determination of an order of priorities on the basis of their relative costs and benefits. These are indicative of the high degree of sophistication in the techniques and practices of planning and programming that needs to be attained in order to ensure a rational utilisation of the national resources. Performance Budgeting could be the basis of such a super-structure.

5. The managerial potentialities of budgeting may be developed through: (a) the classification of public expenditure in terms of functions, sub-functions, programms, sub-programs, projects/activities, works/tasks; (b) the establishment, improvement and extension of activity schedules for all measurable activities of government; (c) the establishment of work output, employee utilization standard or unit costs by objective methods; and (d) the creation of related cost and performance recording and reporting system.

6. Whereas the classification of operating expenditure is in terms of functions, programms activities and tasks, that of investment expenditure is in terms of functions, programs, projects and works. The U.N. Manual for program and Performance Budgeting has defined these terms clearly. Functions represent broad groupings of operations that are directed towards accomplishing a major purpose on government. Programs refer to broad categories within a function that identify and products of major organisations. In the operating categories, it constitutes an instrument for performing functions by which goals could be set and realized by high-level administrative units. As an investment category, a program constitutes an instrument for establishing targets to be achieved through an integrated set of establishing targets to be achieved through an integrated set of investment projects. Complex programs are divided into sub-programs to facilitiate execution in specific areas. An activity refers to a more limited division of action geared towards the attainment of the goals of an operating program or sub-program involving processes for which an intermediate or a lower-level administrative unit is responsible. An activity consists of several specific operations forming part of a process aimed at-achieving a particular result. On the other hand, a project refers to a series of works in an investment program or sub-program for the formation of capital goods, which are carried out by a production unit capable of functioning independently. Works constitute a part of a stage in the formation of capital good that is a segment of a project. Thus, functional classification is the sheet another of Performance Budgets which aggregate budget data to show the share of public expenditure devoted to each public service.

7. Activity schedules are designed to highlight the major processes to be served, the identification of programs directed towards these ends, indication of projects/activities under each program as well as the measurement of the volume of work with data on past, current and anticipated work load such as the number of children to be educated, number of hospital beds to be provided, number of trees to be planted, tons of garbage to be collected etc. These measures should, as far as possible, be countable, reflective of the important resources used and should be set forth in functional terms. If the organisational structure corresponds to be functional framework of an agency

8. Performance Budgeting cannot make much headway without proper measures of work. But there is no single yard-stick for measuring activity or for determining performance standards. Some agencies can use workload and unit cost data; others may use mere workload data or some descriptive material. Often, 'unit cost' conjures up vision of tremendous accounting charts, elaborate distribution tables and acores of accounting personnel busily preoccupied with problems of allocating administrative and other overheads on a cost accounting basis. Though it may be desirable to move progressively in the direction of more accurately quantified work and cost data, less sophisticated measures suitable to lower stages of development and skilled manpower of the various agencies may be employed in the short run. Standards set should be based on a complete understanding of the nature of the work rather than on historical or comparative data. Imperfections on this score would call for flexible standards which may be improved upon over time.

9. Record-keeping along functional lines would help to bring out the variance between budgeted and actual costs, thereby enabling management to check on the work accomplished against work assigned. Some operational factors are likely to lie behind every variation. Wide variations in performance rations may be indicative of improper personnel utilisation, improper work distribution, inadequate procedures, inadequate equipment operation, etc. Some of these may be remediable. Where the veriation is due to remediable factors timely and suitable actions may be taken to eliminate the gap. An ideal reporting system should cover the volume, quality, time expended and costs of each program or activity. Accrual accounting may be used wherever appropriate.

10. It should be recognised that in some areas like diplomacy, work may not be measurable; certain others, like police or fire protection, may not lend themselves to refined measurements; some with large administrative overheads may present knotty problems of cost allocation; sometimes running accounts of work may not tie neatly with budgetary allotments. Nevertheless, a predominant segment of governmental operations can be reduced to sensible quantitative categories capable of measurement at varying degrees of refinement. Experience has shown that the advantages of pressing forward in the direction of quantifications and measurments are enormous. Much, however, depends on whether the introduction of Performance Budgeting is a part of a major change in budgetary and administrative philosophy. Given the desire and drive for efficient management of governmental organisations, Performance Budget could serve as a convenient tool of management. It helps administrators to prepare their budgets on the basis of what they hope to accomplish; it serves both as a tool for reviewing th efficiency of existing operations and

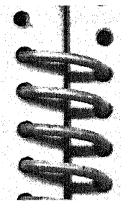
their results and as a system of feeding the data for planning future services; it upgrades the budget decision-making process by throwing up the requisite information on costs and work accomplishments appropriate for various levels of operation, it makes legislative review, control and policy making more meaningful taxpayer. It should be an excellent instrument for translating longterm plans and programmes into reality. It is certainly not a panacea for administrative ills. But, in the hands of skillful administrators it should produce impressive results.

11. Within this broad framework of Performance Budgeting, the technique of 'cost-effectiveness' may gradually be introduced in quantifiable areas. This would facilitate a rational choice of programms in terms of the relative cost and benefitsstreams of comparable alternatives designed to fulfill the same objectives. Such an improvement would help to integrate the processes of Planning, Programming and Budgeting

12. India has a growing public sector with a large developmental component. It has practiced ex ante quantification of her long-term objectives. It has had some experience in programming. But, budgets are not phrased in the same language of the plans. Despite of various reforms the classification of the budget still remains "eccelectic". There is an enormous criss-crossing of functional and organisational responsibilities. The Demands" structure and account heads are somewhat archaic. Accounting is not yet an internal responsibility. Timely and adequate information is not made available for review and corrective action. In essence, budget has not yet become a handy instrument for management. It has a long way to go towards the development of an integrated system of planning, Programming and Budgeting. The introduction of Performance Budgeting is likely to be a step forward in overcoming some of these deficiencies.

13. There are certain steps that may be necessary for the installation of Performance Budgeting in India. Firstly, a constitutional amendment may be necessary to change the accounting format, "Demand" structure, and the role of the Office of the Comptroller and Auditor General of India, as well as to restructure governmental organisation more or less on functional lines. Secondly, arrangements will have to be made to persuade all the state governments to accept the timetable for the transition to Performance Budgeting. Thirdly, a five-year plan for the adoption of the Performance Budgeting at all the Departments of the central and state governments may be drafted. The new system may be introduced in two departments in the Centre and one or two departments in each of the State Governments. A progressive switchover may be phased so that the budgets in all

the departments of the central and state governments may be converted to a performance basis over a five-year period. Beginnings may also be made in the progressive metropolitan governments in developing performance budgets. A similar timetable may also be set for introducing accrual accounting in areas such as public works, railways, irrigation, defence, P&T etc. where it is likely to be most effective. Initial efforts in this direction may be spent to identifying areas where accrual accounting is more essential. A switch over to this system should be adequate preparation, especially with a view to reorient the accounting facilities with the new concepts, procedures and purposes. Fourthly, the Indian Institute of Public Administration with the help and support of the Department of Administrative Reforms, Planning Commission, the Ministry of Finance, the Auditor and Comptroller General's office and corresponding agencies in the state governments, may spearhead the movement towards performance Budgeting. Finally, it is but natural that every human being resists changes and particularly those which may upset the fundamental aspects of his daily work. Adequate preparation to improve human acceptance is, therefore, necessary to smooth the transformation process. Apart from neat and comprehensive manuals of instruction, group meetings, discussions, conferences, seminars, short courses, etc., may have to be organised covering a fair percentage of the personnel involved in the affected agencies. The I.I.P.A. may play the coordinating role in this important area.



Administrative Co-ordination and Citizen Participation for Plan Implementation

H. U. Bijlani*

Any planned development should satisfy a twin requirement of preconceived situation of socio-economic activities, their placement and linkages and a pre-planned coordinated action programme comprising of legislative, financial and administrative measures necessary to achieve that preconceived situation. In this paper we shall discuss the administrative steps necessary to achieve co-ordination in plan implementation. Girish Misra** in his paper on "Planning Paradigm for Integrated Urban and Regional Development" has aptly brought out a theory of four tier growth foci envisaged for the country. These are:-

1. Growth Poles at the national level
2. Growth Centres at the national level which comprises groups of states.
3. Growth points at the sub-regional level which comprise a state
4. Service centre at local or district level

For a co-ordinated action programme the national urban development plan should form the fountain head and plans for the rest of centres should merge into this.

Various levels of Integrated Planning

Any plan whether it is for a service centre at local or district level, or growth points at sub-regional level comprising a state, should merge with the growth centres

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* Professor, Centre for Urban Studies, IIPA, New Delhi.
** Reader, Human Settlements and Physical Planning, IIPA, New Delhi.

and growth pole at the national level. To ensure the success of such co-ordination, it is essential that the various agencies work towards common goals. The guidelines for an integrated national policy are laid down by the Planning Commission. Based on these guidelines the States prepare a plan for their own regions. While preparing such plan, the planners should carry out the stock taking of 'past performances' and should also examine and assess the past failures and successes. They should also set goals to be achieved in different fields of activities depending on the policies which they formulate keeping in view the guidelines laid down by the Planning Commission. Population, for example is one very important factor. Examining the past statistics and demographic surveys population projections are made which would indicate not only the natural growth but also the growth of population which takes place due to rural influx caused by the pull of the urban cities. Outlines are, therefore, to be defined first whether the cities in the state should strengthen the satellite towns or the near by regions to avoid at least to some extent this influx. Accordingly, the provisions in the plans will have to be made. Unless the spontaneous rural-urban migration is turned into a positive development asset through strategic

of deliberate urbanization in areas where additional employment is planned, the consequences of population explosion in urban areas specially in a developing country like ours will be catastrophic. Similarly, the level of education achievements and the level of education desired to be achieved has to be worked out. Such drills will be necessary in all other components like health transport etc.

The State Plan

The state plan is split up into two broad documents - one giving the outline and the other showing the statements of different projects, past performances and future provisions The state plan must ensure that various city governments, development authorities, service undertakings frame proposals which are coordinated and interlinked effectively. For example, it should be seen that the water supply undertakings frame proposals for laying of their service mains, water treatment plants at such locations where the city needs the same and the Development Authority is responsible for developing virgin land, or construction of housing projects would benefit from such schemes. Similarly, the State Government has to be aware of programmes of other departments and Ministries in the Central Government. Enquiries should be made and meetings held to seek information from railways, defence authorities and the departments dealing with industries at the Centre to know their programmes in that

region. The state government then prepares sectoral plans in the fields of agriculture, flood control, power, transport and communication, social services etc. The social services would include programmes concerning education, health infrastructure, water supply and sewerage schemes, housing and urban development programmes, schemes for backward and weaker section, social welfare etc. It should also have an appropriate wing for watching statistics and also make provisions for information and publicity. The Planning machinery of state should be strengthened so that all the above activities can be performed effectively.

Planning the City Region

The city governments, development authorities and other departments under a state government also carry out a parallel drill and prepare their plans and proposals sector wise. Their plans are also divided into two major sections - the one comprising of write ups and the other of scheme wise statements depending upon the activities for which the state government or the development authority is responsible. The sectors have to be in line with state government thinking. Normally the sectors to be covered would be roads, education, medical and public health, slum clearance projects, environmental schemes, staff quarters, street lighting, civic centres and other welfare facilities like Stadiums, Swimming Pools etc

If the water supply, transport and electricity are also with the city government then proposals for these departments also have to be worked out. For each sector specific schemes have to be spelt out and broadly divided into (a) spill over schemes (b) continuing schemes (c) new schemes. It is only when the state governments and agencies under the control of the state prepare the plans in this manner that a workable well coordinated plan emerges.

Administrative Co-ordination

The coordination organization has to exist at all these levels. We shall restrict our comments in this particular case only to city Governments. In a city Government there will be various departments dealing with different sectors included in a plan. There are, however, two major departments which have inter-action with other department. One of these is 'internal finance' and the other is 'engineering'. The engineering department of a city government has deep inter-action with other sectoral proposals because it has to handle the capital components of other sectors also. Under the circumstances, the engineering department will prepare proposals of not only sectors with which it is directly connected, like road development works, bridges,

staff quarters, swimming pools and other community facilities but also capital projects dealing with major departments like education and health. In respect of roads and bridges also it has to have inter action with other organizations like the transport authority, the railways and the 'land use' control authority. Its road development projects have to take into account the new development programmes being carried out by Development Authorities, traffic survey and their future projections etc., long term and short term programmes of water, drainage and electricity with a view to avoid frequent digging of roads. In bigger city governments, the coordination work is normally entrusted to a Senior [illegible] Administrator. In some cases this function has been entrusted to the head of internal finance department or the head of the engineering department. The best course, of course, would be to entrust this object to a Senior Administrator who has multi disciplinary experience. As can be seen from the diagram 'A' the Coordinator has to have inter action not only with the departments dealing with different sectors but also with internal finance, the state government and in some cases with the Planning Commission.

It is essential that the Coordinator understands the guidelines laid down by the Planning Commission and the State Government and in turn passes these on and explains effectively to the concerned departments in his organization. The next step then is to get proposals from concerned departments and get them examined from the finance department of that organization. The organization's plan is then ready for submission to the State Government but before this is done it is again for the Coordinator to have detailed discussions with the state government and his internal finance to ensure that the plan merges with the programmes, policies and goals laid down by the state government and the Planning Commission.

After the plans are presented to the state government or the Planning Commission the amounts ultimately received would widely vary from those which had been asked for. It is then again for the Coordinator to meet the concerned departments and his own finance and re-allocate the sums in accordance with the sanctions received. As a matter of fact, the entire drill of repreparing the plan revising the schemes within the final budget sanctions has to be gone through. The responsibility of implementation of individual

schemes would be that of the concerned departments but it would be for the Coordinator to watch the progress of each departments not only in terms of financial expenditure but also in terms of physical progress. For this purpose he will have to lay down proformas, returns, hold meetings and arrange site inspections to get the 'feedback'. Often problems are created due to inter-action between various departments for which necessary corrections have to be applied. This is a very important function to be performed by Coordinator. As a matter of fact, receiving feed back information, watching the results of inter-action and applying necessary corrections is a continuous process and should result in quick and clear cut instructions to ensure progress and evenly distributed expenditure during the plan period. It is mainly due to lack of this 'Co-ordination' and monitoring that one notices either funds remaining unutilised or bulk of allocation being spent hurriedly and often improperly during the last few months of the plan period.

Prof. Ernest Weissman* has suggested the diagram'B' which tries to present graphically the variety of paths with various interactions ranging from individual, local regional, intermediate, national and international elements

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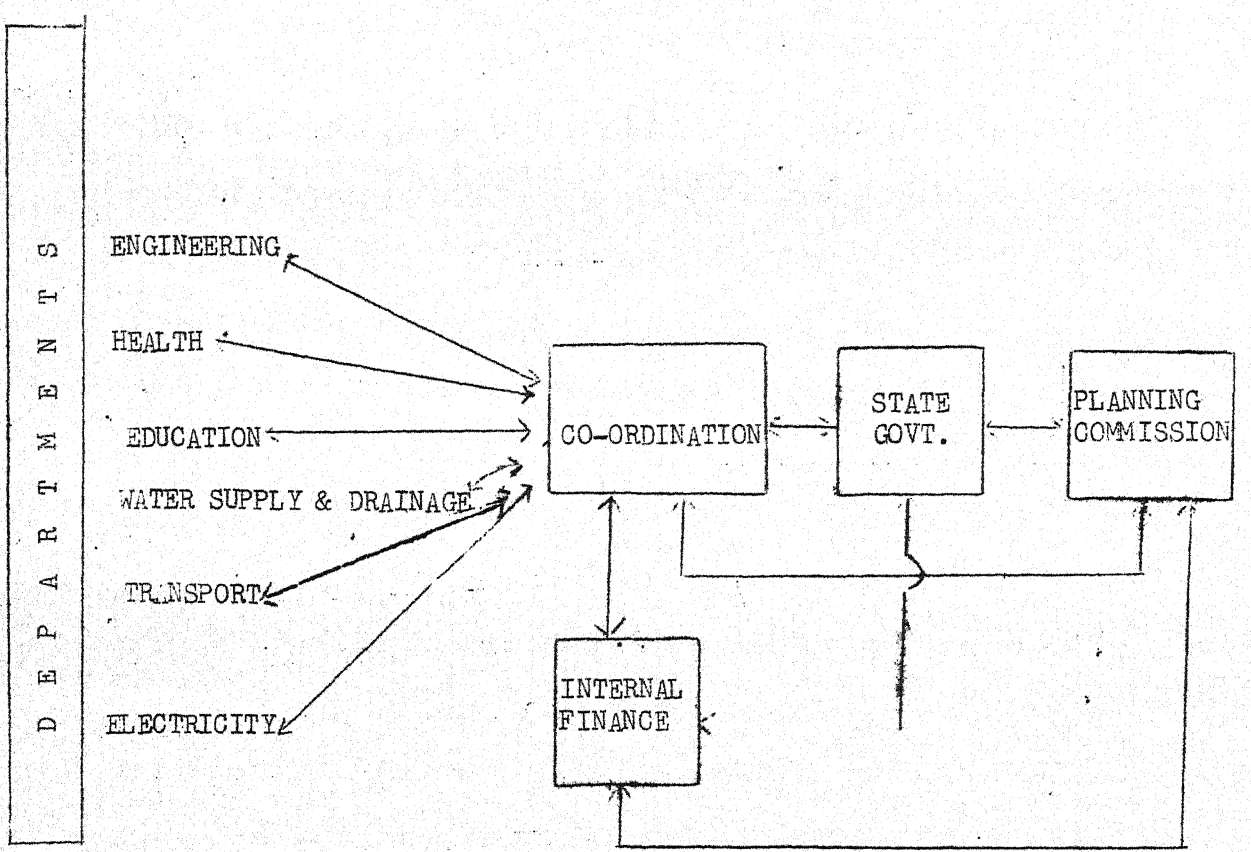
* Former Director of U.N.Centre for Housing, Building and Planning.

can take. Whereas diagram 'A' has been drawn taking into consideration the present level of development in this country, one should not loose sight of what diagram 'B' depicts which encompasses wider fields which we have already started recognising and in time to come will play an important role in plan preparation, implementation and coordination.

Citizen participation

As can be seen from Weissman's diagram (Figure B), Local Government interaction includes affiliations of individuals, groups, professionals etc. Importance of this aspect in our country has been stressed by no lessa persn than Prime Minister of India in her communication to the Chief Ministers suggesting to give undivided attention to the effective implementation of the finalised fifth plan and enlisting of public participation in it. The Prime Minister pointed out that with the finalisation of the plan by the National Development Council, its implementation assumed decisive significance. The only way of evaluating the effectiveness in putting through the plan is to see how far the ordinary man benefits and becomes conscious of some change. Performance could not be judged in terms of financial outlays or of demonstrative physical symbols. The Prime Minister emphasised the special importance of implementation of the plan at the State level as it is there that direct interaction between the Plan and the people exists. The Chief Ministers have been

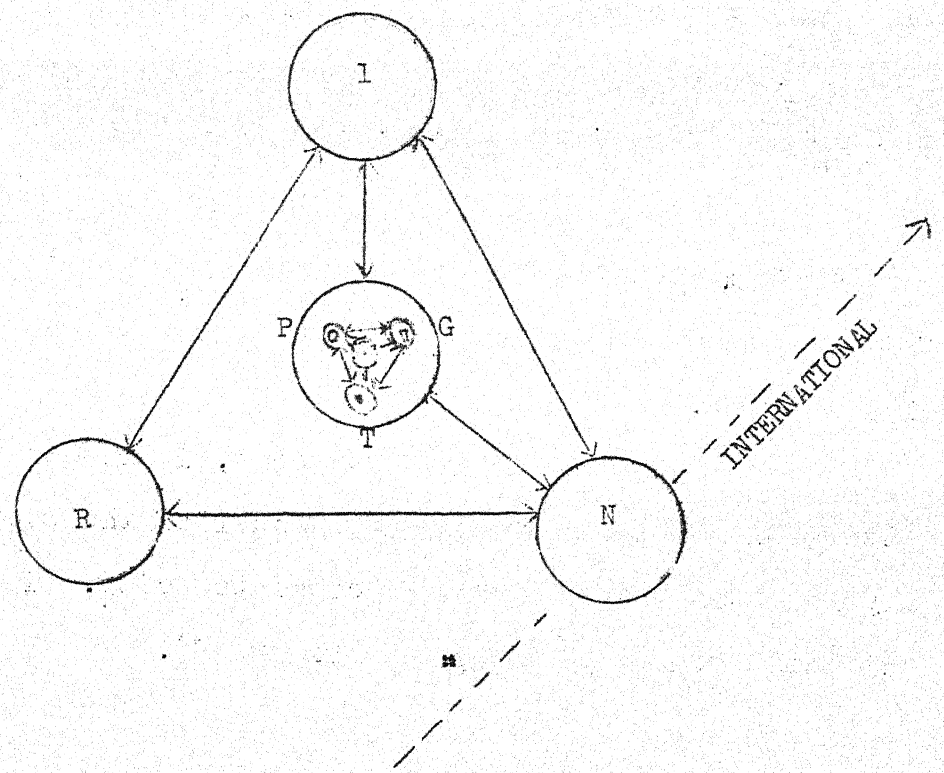


FUNCTIONS OF CO-ORDINATOR

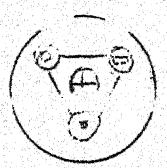
1. UNDERSTANDING GUIDELINES & PASSING ON TO DEPARTMENTS.
2. GETTING PROPOSALS FROM DEPARTMENTS.
3. TRAINING
4. INTERACTION WITH FINANCE, STATE GOVT. & PLANNING COMMISSION.
5. WATCHING PROGRESS.
6. FEED BACK.
7. INTERACTIONS.
8. CORRECTIONS
9. SIMULTANIOUS ACTION ON NEXT YEAR'S PLAN.

FIGURE. 'A'

INTERACTION: Citizen/Territory/Government



GOVERNMENT:



Local

R Regional

I Intermediate

N National (Central)

AFFILIATIONS:

⊕ Invividual

G ⊜ Group

P ⊙ Professional

T ⊙ Territorial

FIGURE 'B'

urged to ensure effective coordination between different departments and the agencies of State Governments and laying down of precise responsibilities at key levels. Prime Minister also asked the Chief Ministers to keep her informed of the progress in plan implementation and its monitoring and evaluation*. Such is the importance that is attached to co-ordination and monitoring of the plan if we want to make it a success.

Reverting to the City Government, I propose to make an attempt in this paper a workable model of the system which may lead to a better governance of the city. I will do so with the help of a diagram (See Figure C).

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* Hindustan Times: November 4th, 1976. Samachar (Nov.3rd) - "Mrs. Gandhi's directives on Plan work"

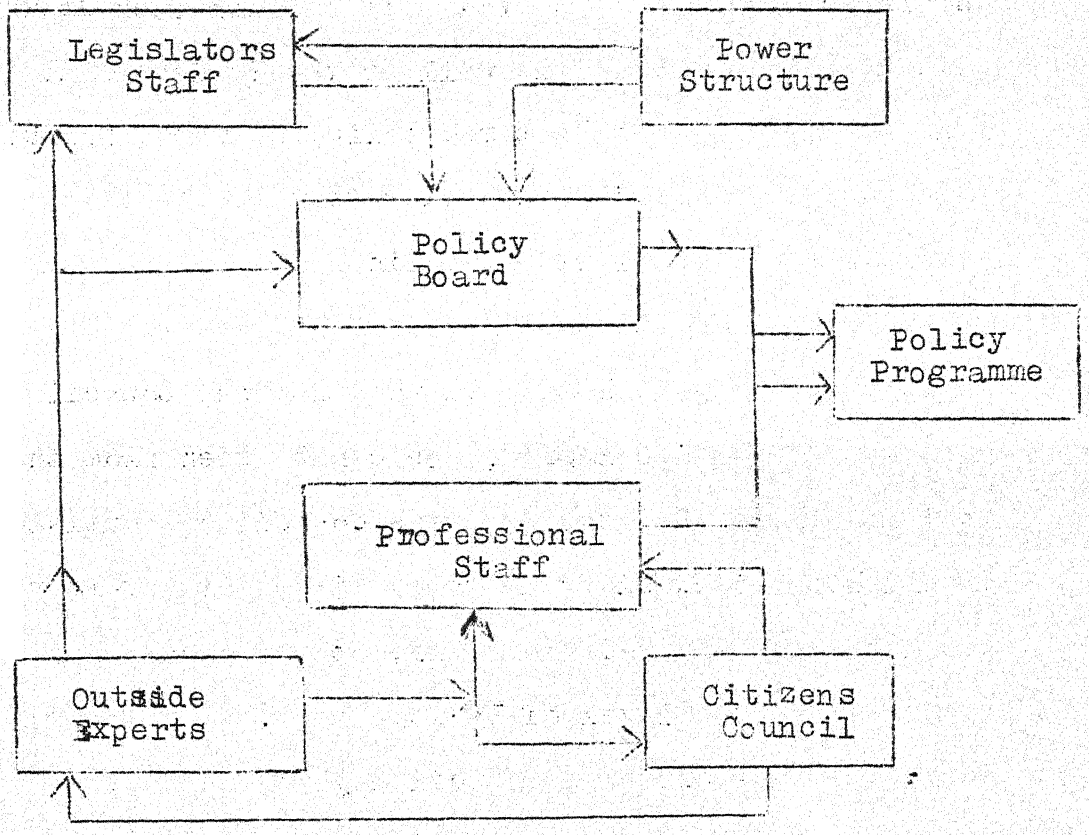
Legislators Staff
Power Structure
Policy Board
Policy Programme
Professional Staff
Outside Experts
Citizens Council

Figure 'C'

The Central entity in this diagram is the Policy Board. The Policy Board will comprise of a Power Pack drawn from the Legislators staff as well as the Professional staff. This is essential so that the policy programme formulated by this Board, can be implemented without any further administrative, political or financial difficulties.

The most important feature is the dialogue which this policy Board should have with the Citizens Council and the outside Experts. As can be seen from the diagram, it is intended that the Citizens Council and outise Experts should hold discussions at three different levels viz. at the level of professional staff, at the level of Legislators staff and at the level of Policy Board. The diagram also shows that the Citizens Council may have direct dialogue with Professional staff because it is felt that for day-to-day needs, certain policy programmes are decided at the level and as such those programmes could be sorted by Citizens Council direct with the Professional staff. For the programmes, which can be decided only at the level of Legislators it is essential that the Citizens Council and outside experts should have discussions not only with the policy board but also with the Legislators staff direct. The policy programme thus framed can be considered as a programme which has been evolved with public participation and when implemented will be

of great interest to the citizens to watch its execution.

In the developed countries, where the civic consciousness comes automatically to its citizens because the same has been inculcated into them through generations of proper education in schools and through television, cinema, newspaper etc., public involvement is practised in a different manner. Local Governments examine their potential future with the help of public participation of younger generation and thus they try to evolve solutions full of imagination to their problems of the future as well as present. Alvin Toffler explains how one way to do so " would be to establish in community 'imaginetic centres' devoted totechnically assisted brainstorming. These would be places where people note for creative imagination, rather than technical expertise, are brought together to examine present crises, to anticipate future crises, and to speculate freely, even playfully, about possible futures.

What, for example, are the possible futures of urban transportation? Traffic is a problem involving space. How might the city of tomorrow cope with the movement of men and objects through space? To speculate about this question, an imaginetic centre might enlist artists, sculptors, dancers, furniture designers, parking-lot attendants, and a variety of other people who, in one way or another, manipulate space imaginatively. Such people, assembled under the right

circumstances, would inevitably come up with ideas of which the technocratic city planners, the highway engineers and transit authorities have never dreamed.

Musicians, people who live near airports, jackhammer men and subway conductors might well imagine new ways to organize, mask or suppress noise. Groups of young people might be invited to ransack their minds for previously unexamined aproaches to urban sanitation, crowding, ethnic conflict, care of the aged, or a thousand other present and future problems.

In any such effort, the overwhelming majority of ideas put forward will, of course, be absured, funny or technically impossible. Yet the essence of creativity is a willingness to play the fool, to toy with the absurd only later submitting the stream of ideas to harsh critical judgment. The application of imagination to the future thus requires an environment in which it is safe to err, in which novel juxtapositions of ideas can be freely expressed before being critically shifted. We need sanctuaries for social imagination."

My visit to the City Hall of Toronto taught me more about the art of city government than all the great speakers I

heard and the books I read. I was reminded of the following lines of verse:

'One impulse from the Vernam wood can teach us
more of man
Of all the evil and the good than all the sages
can'

The City Hall deliberations are watched by citizens from th
which
the galleries/ are somade that the citizens think they are participating in the entire government of the city. How I wish they could make the citizens, by some uncanny miracle, actually take part in city government. Can we do so by some method?

That is the question. In an answer to this question lies the clue to our problem.

Importance of Social Indicators in a Scheme of Programme Budgeting

K.L. HANDA

A budget can be many things depending upon its structure and the uses to which it is put. According to Aaron Wildavsky, a budget may service diverse purposes and can be:

> " a political act, a plan of work, a prediction, a source of enlightenment, a means of obfuscation, a mechanism of control, an escape from restrictions, a means to action, a brake on progress, even a prayer that the powers that be will deal gently with the best aspirations of fallible men".1

Different types of budget classifications have been evolved to serve diverse purposes, such as object or line-item classification, economic classification, functional and programme classification. No single budget classification has been found to serve equally well all the purposes, like control over inputs, depicting well the state of the economy, and providing an effective tool for the planning and management of government programmes and activities. The choice of a system of classification in the budget, therefore, has to be emphasised. As stated in the United Nations document:

> "The various ways in which the public sector transactions can be classified are; by object, by organization, by functionm by their economic character, by programmes and by the types and origin of the purchases effected by a government. It is obvious that no single systemoff classification will serve all the purposes of planning and budgeting. The choice of a system of classification would have to be related to the relevant purpose".2

The concepts of performance and programme budgeting are considered to lay greater emphasis on economy and efficiency aspects of programme planning and management. A

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1 Aaron Wildavsky, The Politics of the Budgetary Processes (Boston: Little, Brown and Company, 1964), p.v.

2 United Nations, Government Budgeting and Economic Planning in Developing Countries (New York, U.N. Publication, 1966) p.11.

functional classification of the budget is necessary under a system of performance and programme budgeting. By functional classification it is meant that the budget peresentation of public expenditures will be in terms of functions, programmes, activities and projects.

A function is generally a broad division of the total organized effort of Government. Thus, each of the following: education, public health, national defence, agriculture, may be defined as a function. A programme comprises a significant sub-division of the function. Accordingly elementary education, secondary education, vocational and technical education, higher education, could be programmes under the function named education. An activity under each programme could be composed of the number of classes or students taught. A project generally covers expenditure on buildings, construction, and equipment. The United Nations Manual for Programme and Performance Budgeting has defined these terms as follows:

"The classification structure for a programme and performance budget involves the identification of :(a) functions - broad groupings of operations that are directed toward accomplishing a major purpose of government; (b) programmes - broad categories within a function that identify the end products of major organizations; and (c) activities - segments of a programme that identify homogeneous types of work carried out by subsidiary organizations to produce the end products of a programme".3

THE CONCEPTS

Under performance budgeting, a budget is considered to be a work programme and a tool of management. Programme budgeting treats budgeting as an allocative process among competing claims and considers budget as a statement of policy. In short, the main focus in performance budgeting is on activity analysis and in programme budgeting on output analysis. The diagram on the next page has been used to clarify the concepts.

Vector I stands for the inputs used which result in activities represented by Vector II. These activities produce output denoted by Vector III. Performance budgeting

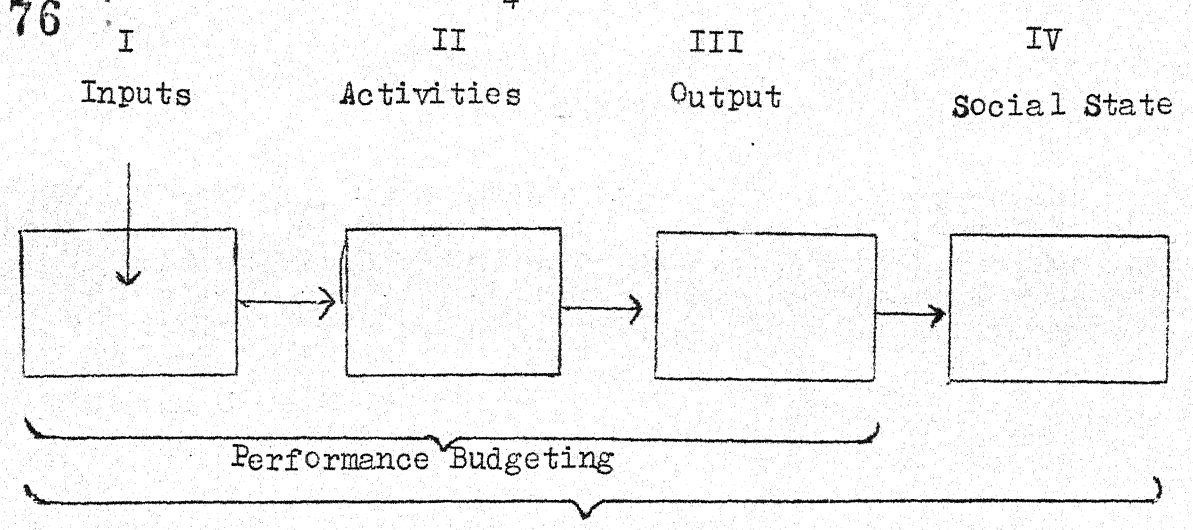
3 United Nations, Department of Economic and Social Affairs, A Manual for Programme and Performance Budgeting (New York, U.N.Publication, 1965), p.5.

comprises these three components, namely, Inputs - Activities - Output. Activities are the intermediate step to provide the implementing link between inputs and outputs. Taking the example of an educational institution, inputs would comprise the hired teachers, supervisory personnel, buildings and equipment installed, materials and supplies purchased, etc. These inputs should result in activities, like the number of students taught, and the number of hours of instruction imparted. The output of these activities should be the immediate result assessed from the number of students who actually passed out duly qualified. Vector IV in the diagram denotes social state which in the present example should mean how useful the imparting of education has been in the students' acquiring the socially desired knowledge and personality as reflected in the community values. Social state represents the ultimate end objective for which the three preceding stages of inputs-activities-output are gone through. Programming budgeting comprises all four vectors, namely, inputs-activities-output-social state.

An examination of input-output relations is involved in both the concepts adopted for performance budgeting and programme budgeting. However, performance budgeting has the limited objective of measuring the direct output resulting from the activities performed and the inputs used, while programme budgeting goes a step further by embodying a broader objective of measuring the social state resulting from the output produced. Assessment of social impact, of course, includes measurement of the various externalities associated with the output. A scheme of programme budgeting should involve encompassing all the costs and benefits (primary, secondary, tertiary, and so on) of activities to determine the social state resulting from the impact of the activities. Under a system of programme budgeting, therefore, the input-output relationship will have to be established in the context of social costs and benefits of the activities.

THE PROBLEM OF MEASUREMENT

The systems of performance and programme budgeting help in bridging the gap between planning and operating decisions. They involve fixing of targets for achievement which is followed by the measurement of progress made in relation to the targets set. Input-output ratios are sought to be calculated with the aim of achieving the best possible results.



However, in a scheme of performance budgeting, the efficiency of operations is determined by relating the direct cost of inputs to the directly resulting activities or outputs. The aim is to achieve the given output at the least possible cost or to maximise output for a given cost. The state of efficiency is judged by the amount of output obtained per unit of input-resources. The cost-efficiency efforts necessitate fixing of meaningful norms and standards for the measurement and evaluation of performance. Such pre-determined performance indicators facilitate control and evaluation by management of the progress of work operations.

Whereas quantification of performance in areas like policy-making, research, diplomacy, etc., involves difficult problems, perfirmance oriented indicators can be developed with greater facility in many other areas and for various sectors of the national economy. It may indicate the state of efficiency to know the number of gallons of water supplied by the concerned agency as related to the cost of operation. The number of miles of roads constructed as related to the cost of construction, teacher-student ratio in a school, hospital beds utilization rate, etc., may be some other performance indicators. It may, however, be a difficult situation if indicators are sought to be developed for administrative performance in respect of activities like coordination, control, etc. However, the quantification of indicators of performance is the key stone on which a management information system can be built for monitoring and evaluation of operating results. The analysis can be centred around input-output ratios as indicators of efficiency. This task presents less problems if focused on measurement of direct inputs or their directly resulting outputs without taking account of the associated externalities. Such is the case under a system of performance budgeting as defined in the preceding paragraphs.

But the situation presents formidable difficulties when input-output relationship is worked out within the framework of programme budgeting. Under this system, it is not only the direct costs of inputs and the directly resulting outputs which need to be measured, rather the various associated inputs or costs and outputs or benefits are also required to be measured. This is generally done with the aid of the technique of social cost-benefit analysis the use of which poses many other problems.

PROGRAMME BUDGETING AND THE IMPORTANCE OF SOCIAL INDICATORS

Programme budgeting, by employing the technique of social cost-benefit analysis provides the decision maker with the necessary information for a systematic comparison of the costs and benefits of alternative approaches to the achievement of policy objectives. The costs here include the whole stream of costs, i.e., primary, secondary, tertiary, etc. Similarly, on the other side, the primary, secondary, tertiary, etc., benefits need to be considered for comparison with the total costs occurring in the society. In other words, the social state resulting from the impact of the stream of costs involving various activities or outputs, needs to be measured and compared with the corresponding social costs (i.e. the whole stream of costs). Measurement of social state, however, is difficult to be done unless we have evolved the necessary social indicators for the purpose. For instance, if it is to be done for the function of education, we must have available with us social indicators to tell us as to how useful the imparting of education has been in the students' acquiring the socially desired knowledge and personality as against the social costs incurred on their education. Taking the example of urban development, for carrying out impact analysis or measuring social state, aesthetic and environment considerations may be as important as measureable effects on neighbourhood land values. Such a situation further highlights the importance of evolving social indicators for the measurement of social benefits to aid formulation of public policy.

Cost-benefit analysis may be quite misleading if the emphasis is placed on measurable outcomes to the neglect of the non-measurables. It is likely that in an impact analysis of benefits the non-measureable ones or the intangibles form the bulk. It becomes fraught with serious difficulties if an attempt is made to get at a picture for comparison by attaching monetary values to intangibles. At the same time, it distorts the comparison ifonly those benefits and costs are

emphasized which are susceptible to measurement rather than those that are not. In order to make a assessment of the impact of output on social state a broad view needs to be taken of the effects of activities so as to comprehend the full range of externalities of both quantifiable and non-quantifiable nature.

There are also situations where the outputs of specific activities get mixed up with those caused by various other factors. The improvements in health, in addition to being caused by specific measures of medical care and health delivery services, may be the results of improved environment, better education, higher incomes, and enlarged economic opportunities in the community.

It is difficult to disentangle the effects of a specific health programme from the effects of many other factors influencing the health of people. The inter-relationships among the effects of programmes in different functional areas make it very difficult to assess the impact on social state attributable to specific public policies.

It is, however, necessary to frame objectives for the achievement of which certain programmes are formulated. Also, social indicators need to be evolved for measuring the effectiveness of these programmes in achiving the objectives. For instance, health improvement programmes may have various objectives, such as elimination of specific diseases, reduction of infant mortality to specified levels, raising average reading scores of poor children to given levels, improving human resources, improving the earning capacity and ability to function of individuals and families, and institutional and community development. The analysis of a specific health programme has to focus on the problem of valuing the benefits in achieving these objectives as against the costs incurred. Whereas, agreed upon social indicators are essential for measuring the benefits, it is also necessary to find ways of identifying such benefits as could be attributed to specific inputs, costs or activities.

SOME IMPORTANT ISSUES

An important issue relevant to a proper working of the system of programme budgeting pertains to the need for developing an adequate range of social indicators. These indicators are necessary for setting targets for achievement, for monitoring information regarding progress of work, and for evaluation of performance. One approach to collect data for use as indicator of performance is to generate it as a

by-product of administrative activity, for instance, the number of doctors in relation to the hospital beds or the doctor patient ratio. There are also other approaches for collection of statistics to crystalise into social indicators. However, the social indicators available so far, whether representative, candidate, direct, indirect or proxy, are in an infant stage of development and therefore are not adequate to serve the various purposes. This highlights the need for much efforts and work to be devoted for developing measurable social indicators.

However, before it is attempted to evolve social indicators for specific areas, it is essential to know as to what types of social state it is intended to measure. This presupposes the existence of a general model of society embodying agreed ideologies and accepted philosophy. Once the goals and objectives are known, it is easy to determine the nature of data necessary to be generated. The basic stiatistics thus collected can be utilised for structuring information in accordance with the conditions of social change which are sought to be measured. The process may be taken further to crystalize the structured information into meaningful social indicators.

Therefore, the first essential is that we should be clear about the type of social state we want to measure as a consequence of expenditure of specific inputs. Secondly, it is imperative to evolve those social indicators as would enable measurement of such a social state. If by incurring costs on educational improvements, the desired social state to be achieved is the development of educated citizens with personalities as socially acceptable and imbibing the desired societal values, then those social indicators need to be evolved as would measure such a social state. Similarly, if changes in the level of living are to be measured, we should first determine the acceptable components which comprise the cultural pattern of life of the society, and then develop social indicators as would enable measurement of changes in these components of level of living. The data generated and the information structured should accord with the specific needs of social indicators thus decided upon.

The issues embodied in the preceding paragraphs have been raised because the tendency so far has been to develop indicators for which data are readuly available and arrangements exist for the collection of statistics. The impact analysis is conducted to accord with the available statistics

rather than making efforts for the creation of data to suit the needs of measurement of social state as is decided to be measured on other relevant considerations.

As Prest and Turvey have remarked:

"Before exploring the conceptual problems, it should be noted that some of the differences between authors in the way they estimate benefits stem from differences in the availability of statistics rather than from differences in what the authors would like to measure if they could".4

It is, therefore, suggested that the type of social state to be measured should be decided upon on its own logic and within the framework of accepted public policies, and then social indicators should be developed for the measurements and evaluation of the impact created by the planned activities. The impact analysis should not be dictated by the type of statistics available; rather, efforts should be made to create the necessary data for the specific purpose of developing social indicators to suit the nature of social state which is sought to be measured.

It may, however, be stressed that the development and use of social indicators for impact analysis do not exclude the use of other performance indicators for management control and evaluation. In fact, social indicators, as supplemented by other performance indicators, serve better the purposes of performance evaluation.

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CURRENT ISSUES IN COST-BENEFIT ANALYSIS

H.G.Walsh & Alan Williams

Introduction

Cost-benefit analysis is coming to be applied to a wide variety of public projects, at all levels of government. Although this technique is still at the pioneering, experimental stage, it has already provided a useful framework for identifying and clarifying the crucial issues in what at first sight often appears to be an impenetrable tangle of conflicting facts, opinions, judgements and assertions. By marshalling data systematically, putting it in quantitative terms wherever appropriate and rendering it as commensurable as possible, it lays bare the considerations relevant to a complex decision in a manner which provides policy-makers with a much more intelligible and comprehensive view of the situation than is possible by any other means.

In June 1967 a symposium was held at H.M. Treasury Centre for Administrative Studies in London at which some two dozen practitioners from government and the academic world were invited to discuss the problems of principle which they had encountered in this field. No papers were presented, but an agenda of topics for discussions was circulated in advance, which was based on the theoretical issues raised in the recently published survey article by Prest and Turvey* to which had been added some other subjects suggested in advance by the participants. A note was prepared summarising the discussion that then took place, and that in turn led to the suggestion that a somewhat less technical, slightly expanded version, giving some of the background to the issues discussed, and examples indicating their practical relevance, as well as a summary of the actual proceedings, might prove valuable for those non-economists who are increasingly likely to be involved in cost-

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* A.R. Prest and R. Turvey, Cost Benefit Analysis: A survey. Economic Journal.Vol.LXXV (1965), reprinted in volume III Resource allocation Surveys of Economic Theory, Mac-Millan, London (1966).

benefit studies in the future. This booklet is the result, and its curious pedigree has meant that it is now neither an accurate report of the proceedings of the symposium nor an entirely independent peice of work by its nominal authors, but a hybrid bearing traces of both.

The starting point for this discussion of current issues in cost-benefit analysis is the unspoken acceptance by all participants of the usefulness of the technique, allied with a common concern that economists in this field are having to grapple with theoretical problems that are on the frontiers of our knowledge, but which are nevertheless at the heart of the subject. In order that cost-benefit analyses may be pursued in full awareness of what practices and assumptions are and are not acceptable in principle, it is necessary that these issues be widely aired, and their relevance understood. Some of the thorniest theoretical issues (e.g. that surrounding the appropriate conceptual foundations for the discount rate) may have relatively little immediate import for the practice of cost-benefit analysis, whilst others apparently theoretically insoluble problems(like the proper way to handle the redistributory impact of projects between different groups in the community) can (and perhaps should) be left explicitly to the judgement of the policy makers. Thus devices which appear to be 'arbitrary' methods of solution to the economist qua theoretician may be perfectly acceptable in a wider context. Naturally enough, however, the economist qua theoretician in anxious to enlarge the analytical power of his conceptual apparatus as far as it legitimately can be extended. Indeed, it is this very desire to apply in hitherto unfamiliar contexts the insights of received doctrine that led to the development of cost-benefit analysis in the first place. It is the nature and substance of this quest which it is hoped to convey in this booklet.

The issues to be considered are the following: How does cost-benefit analysis differ from conventional financial appraisal? What kinds of external benefits or costs are to be included and which excluded if double-counting is to be avoided? How far should external benefits or costs be pursued when they are obviously remote from the main purpose of the project? Should undesirable attributes of projects be considered as 'costs' or 'negative benefits'? Should only those benefits and costs which affect decisions at the margin be included, or should all benefits and costs be included?

The Enumeration of Costs and Benefits

(i) How does cost-benefit analysis differ from conventional financial appraisal?

Techniques of investment appraisal, developed primarily for use in the private sector, are often unsuitable for wider public sector purposes (e.g. for investment in roads, education, health) because they are confined in scope to the consideration of financial returns and cash outlays.* Where a strictly financial appraisal of a project gives an inadequate picture of its overall economic advantages or disadvantages to the community at large, it is necessary to employ cost-benefit analysis.** This analytical tool is designed to tackle the question 'what are the social costs and social benefits attributable to the project? @ The emphasis on 'Social' costs and benefits is intended to make it clear that all costs and all benefits, no matter who is better officer who is worse off within the community, must be taken into account. In this way items may appear in a

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* See NEDC, Investment Appraisal, Second Edition, HMSO 1967.

** A brief outline of the development of the concept of cost-benefit analysis including its relationship to private investment appraisal is given in CAS Occasional Paper No.4 'Output Budgeting and the Contribution of Microeconomics to Efficiency in Government' by Alan Williams (HMSO 1967).

@ Project', as used here, need not imply physical investment-cost-benefit analysis is a suitable technique whenever financial returns and outlays alone are insufficient criteria for judgement. It has

contd.....4

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cost-benefit appraisal which would not appear in a purely financial appraisal. For example, the benefits from consequentially-reduced congestion on the roads of Central London were counted in the appraisal of the Victoria Underground Line (and its Brixton extension) even though the beneficiaries do not contribute to the revenue of the undertaking (and indeed may not be called upon to pay for this benefit at all). Conversely, there may be items in a financial appraisal which disappear, or are substantially modified, in a cost-benefit appraisal. An example of this kind of transaction would be a situation in which a project employed labour which would otherwise have been idle, for in this case the financial appraisal will count in all wage payments, whereas a cost-benefit appraisal will eliminate all payments to workers who otherwise would be unemployed*, on the grounds that no social cost is incurred (i.e., society is not taking any real sacrifice in using that labour, since it was not doing anything anyway). The differences between the social effects of a project, and those which are of purely private consequence, are known generally as 'external' or spillover' effects.

(ii) What kinds of external benefits or costs are to be included?

The problem here is to determine which of the external effects are merely reflections of the changes that have already been taken into account as the direct benefits or costs of the project, and which external effects are really distinct from these direct benefits or costs and therefore need to be counted in separately. The principle to be applied in making this distinction is embodied in the question "is the external effect one which affects the

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contd.3. been used, for instance, in judging whether tools are desirable on an existing road system. For the purposes of the present discussion, however, it will be assumed that the project involves investment.

* In this context, "unemployed" should be taken to mean not employed on work of any economic value whatever". Thus a man who is registered as unemployed, but who digs pensioners' gardens while off work, is providing a valuable service to the community. The cessation of this activity should in principle be included in a cost-benefit analysis as a cost of providing him with an industrial job.

amount of output that others can get from a fixed amount of input? For instance if a motor-way cuts a farmer's holding in two, such that his grazing land is in one part and his cowsheds in the other, then the motorway has adversely affected the physical output he can get from his land and buildings. Similarly, turning to a consumption rather than a production case, if the motrway also blocks out a pleasant view from a house, then the occupier suffers a loss in the amount of visual enjoyment derived from his property. Both of these cases would be classified as technological spillovers, because they reflect changes in the technical (i.e. physical as opposed to financial) relationship between resources and the goods or services to be derived therefrom.

The other type of external effect, not to be counted separately, is known as the 'pecuniary spillover'; this occurs, for instance, when a petrol station already situated on a main road near to a new motorway exist finds its trade so expanded that the resale value of the business rises sharply. This effect is not attributable to any change in the technical possibilities of converting its inputs (land, labour, capital equipment, petrol, etc.) into output(petrol supplies and other services to motorists), but to enhanced profitability flowing from demand generated by the motorway users, i.e., it is a strictly pecuniary benefit, accruing to those who happen to be the beneficiaries from the way in which the economic system generally adapts itself (via the price mechanism) to the new pattern of activity generated by the project. Since the benefits tomotorways users will have been measured as part of the direct benefits of the scheme, it would constitute double counting if the consequential adjustment in the economy which are needed to make these benefits possible were also counted in their own right.

The maintenance of this distinction in practice is often no easy matter. Both types of spillover may be present simultaneously (for instance in town centre redevelopment schemes), and since both will tend to be reflected in changes in capital (or rental) values of

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resources, it will probably be difficult to disentangle them. Moreover, although pecuniary spillovers are to be ignored in the calculation of the total net benefits of a project to the community, they will need to be kept very clearly in mind when assessing the distribution of gains and losses between different members of the community (e.g. to the extent that they are the result of diverted car journeys, the gains of the garage proprietors near motorway exist may well be offset to some extent, by the losses of others whose service stations lie on roads now carrying less traffic as a result of the motrway).

(iii) How far should external benefits or costs be taken into account when they are obviously remote from the main purpose of the project?

Whether a particular benefit or costs is regarded as 'external' or not depends upon the terms of reference and interests of those commissioning the study, but in any case all costs and benefits should be included on an equal footing, whether direct (internal) or indirect (external) --apart from pecuniary spillovers, of course -- otherwise significant effects on the community may be ignored. It may be possible to build up these external effects in successively more remote layers, so that decision-makers can choose the stage at which benefits and costs became too remote (or too insignificant in quantitative terms) to be worth considering in relation to the main purpose of the project.

This device has the advantage of ensuring that any external effects that are left out are excluded as an explicit act of policy, and not casually or haphazardly reject on criteria or remoteness or significance which are at no stage subjected to proper scrutiny. Moreover, their inclusion in the analysis on the first round focuses attention on the fact that it is often possible to influence such external effects by appropriate action. For instance, one external effect of modern airports is the generation of noise, which adversely affects

many activities carried on in the vicinity (it is a 'technological spillover' in the terminology used above). But it may well be possible to minimise this effect by appropriate design and siting of the airport itself, or by the exercise of wider planning powers affecting the locations of activities, or by offering to subsidise ameliorative measures (like sound proofing) lying outside the immediate scope of the project itself. In other words, these external effects may themselves be regarded as 'variables' in the problem, to be considered manipulable alongside the more direct effects.

(iv) Should undesirable attributes of projects be considered as 'costs' or as 'negative benefits?

The phenomenon just quoted, of noise aircraft, is one example of a class phenomena which are sometimes called 'disbenefits' from projects, i.e. an undesirable side-effect. There are two distinct ways of classifying such items, the first to treat them as negative benefits and place them alongside the positive benefits and the other being to treat them as costs and to place them alongside other costs. The first method of classification is based on the view that it is better to keep all 'inputs' (good or bad) separate from all 'outputs' (good or bad), while the second method is based on the view that it is better to keep all the good things (advantages, arguments for) together (whether inputs or outputs) and all the bad things (disadvantages, arguments against) together (whether inputs or outputs). To the extent that this is simply an expositional matter, the choice must obviously be determined by the need for clarity and comprehensibility.

There is one circumstance, however, in which the manner of treating 'disbenefits' might affect the substance of the outcome, and that is where projects are being ranked according to benefit/cost ratios. In such circumstances, a disbenefit would

be subtracted from the numberator if treated as a negative benefit, but added to the enominator if treated as a cost, and these two procedures yield different numberical effects upon the benef it cost ratio.*

(v) Should only those benefits and costs which affect decisions at the margin be included or should all benef its and costs be included?

This problem becomes important in cases where some of the benefits are derived quite quickly and exhaustively at relatively low levels of provision of the service (e.g. the advantages of universal basic literacy derived from education services), While beyond this point there is virtually no further advantage to be gained in this particular respect by extending educational provision further. Hence 'at the margin' the literacy benefits is zero, though clearly it is very large for the education service seen as a whole. For this reason it is argued that such 'non-marginal' benefits are irrelevant to the appraisal of particular projects.

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* The ratio of discounted benefits to discounted costs has in the past been used as an index of the relative desirability of projects. This particular ratio is likely to be misleading in other situations besides the positive cost-negative benefit case. It might be seen as the rough equivalent of the sales-expenses ratio sometimes employed by private firms, which gives no indication of the rate of return on capital. This may be illustrated by comparing two projects, A and B, with the characteristics shown in the table below.

Present values (£'s)	Project A	Project B
Benefits	4,000	5,000
Capital costs	2,000	2,000
Running Costs	--	1,000
Net present value	2,000	2,000
Benefit/cost ratio	2	1, 66

The attribute of having £1,000 of operating expenses, wholly balanced by increased benefits, has in this case caused projects B to have a lower benefit cost ratio than project A, despite the fact that it has a similar present

Contd.9

Against this it is argued that in practice cost-benefit appraisals are usually formulated as a choice between a small number of alternative 'lumps' of investment, and the analyst is asked to advise on the total net benefits of each. There may be no scope for nice calculation of the optimum scale at which each project should be undertaken, which is what the strict marginalist approach presupposes. Hence, in a situation in which a choice is to be made between one 'lump' and another, all benefits attributable to each lump must be included, since for all practical purposes the whole lump is the margin in this case.

Between these two positions lies a case in which the appraisal may concern several projects all of which provide the same level of basic benefit in some particular respect (say literacy again), and none of them would provide more or less literacy if varied individually in scale. In such a case clearly the literacy benefit could be ignored in chosing between them (but not in deciding whether do do something or no thing).

It should be noted, however, that even if such non-marginal benefits are ignored in the assessment of net benefit, they will need to be brought back into the analysis when estimating the overall distribution of benefits and costs between different groups in the community for at this stage it is essential to have all benefits allocated, and not just those which actually affect the decision at the margin.

Contd: Value and is therefore of equal desirability. The definition of the benefit-cost-ratio is nowadays usually given in a more satisfactory from. If it is taken to mean the ratio of the present value of net benefits, apart from initial capital costs, to initial capital costs, both benefit-cost rations in the above example are made equal.

THE MEASUREMENT OF
COSTS AND BENEFITS

The enumeration of the cost and benefits that are to be measured is but the first stage in the analysis. The actual process of measurement will require two further conceptual steps; the quantification of the inputs and outputs, and their valuation. The analysis would obviously be more straightforward if all the relevant variables were valued in a common denominator (which in practice usually means in financial terms), but this is not always possible or acceptable.

(i) What is the proper role of market prices in the valuation of cost and benefits?

It is tempting in cost-benefit studies to seize first upon any items in the analysis which do have market prices, and to use these without more and to evaluate those benefits and costs, then to concentrate attention upon the remaining items which appear less tractable. however, market prices may be a poor indicator of social costs or social benefits in certain cases, and market prices should not therefore be accepted uncritically. On the other hand, no cost-benefit analyst is in a position to engage in a comprehense-ive critique of the market system and its manifold defects, still less to hold himself out as being able to substitute more accurage valuations across the board than those which that system generates. Perhaps the best working basis on which to proceed is to attempt to identify those grosser deviations between market prices and social values which appear to be most significant in the particular context in which the project is to be appraised.

A useful analytical concept in this context is the 'shadow price', which is the price which reflects at the margin, the social value of the good or service. It is treated as a 'management' price, or as

a 'planning' price; it may or may not be the actual amount to be paid for the goods or services to which itrefers. For instance, where a project will use labour which would otherwise have been unemployed, the 'shadow price' of labour might be regarded as zero, even though market rates of wages are paid, since, it cost society nothing (in terms of other goods and services foregone) to have the labour used.* If unemployment is regarded as a bad thing per se, the shadow price' of labour in this case would in fact be negative, i.e. instead of the employment of labour being a cost in would be a benefit. Shadow pricing might also be relevant to the saving or earning of fore-ign exchange at a time when the economy of any country is severely canstrained by a balance of payments deficit, and in that case the 'shadow price' of foreign exchange would be higher than the normal exchange rate.

A much more fundamental difficulty arises when the projects under appraisal are so large that they are likely to change the price structure significantly (e.g. the construction of a major rail link in an underdeveloped country). Cost-benefit analysis has normally been regarded as a comparative-static, partial-equilibrium form of analysis; i.e., as being concerned with before and -after comparisons of two situations, each of which reflects a full adjustment of the immediately affected parts or the economic system to a stable (or at any rate unaffected) general environment. Within such a context the repercussions of any change will be relatively limited in size, and large segments of the economy can be taken to be affected to so small an extent as to be safely

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* Sometimes the convention is adopted of valuing otherwise unemployed labour at the market wage in order to separate questions of allocation of composition of demand from questions of stabilisation policy. While this may be a useful analytical device, there is no reason why the central government should insist upon such a narrow view of welfare.

negligible. Once this restriction is abandoned, it is necessary to resort to a general-equilibrium from the analysis, in which the whole system has to be regarded as variable. Clearly this is a task of a very different kind, and one for which it is argued that cost-benefit analysis has not been designed, and to which it is therefore irrelevant. Unfortunately, the distinction between 'large' and a (small' project is not a sharp one, and is incapable of definition in such a way as to make it so. It therefore remains largely a matter of judgement as to how far it is safe to go on making the ceteris paribus assumptions which partial-equilibrium analysis, requires, and it is equally a matter of judgement (initially at least) as to which particular assumptions will be the most productive in isolating the most important variables without at the same time concealing the impact of other significant ones.

Even if it proved possible to identify with sufficient accuracy the large structural changes in prices and costs which followed from such a large project there remains the awkward problem of deciding whether it is the pre-project or post-project prices which should be used for evaluative purposes, or some mixture of the two. This is the familiar index-number problem to which no wholly satisfactory solution has been devised. The most conservative approach is to say that only if the post-project situation is better than the pre-project situation on both sets of prices is it clear that it should be undertaken. But obviously other less restrictive requirements may well be acceptable, such as that the gainers must be able to compensate the losers and yet leave themselves better off.

(ii) How can benefits or costs be valued which do not have market prices?

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* See Bane CAS Occasional PapersNo. 8.

For the many benefits (and the relatively less numerous costs) which do not have market prices, valuation is often attempted by indirect means. Thus estimates of the value of time saved by speeding up the additional earnings made possible thereby, or by estimating the value which individuals appear to put on their own time when offered the possibility of a faster journey at a higher price. The value of health benefits is sometimes estimated in terms of the avoidance of loss of earnings through ill-health, although this obviously ignores the intrinsic work of good health to the individual. Educational investment is sometimes valued by reference to the marginal increments which it adds to the earnings of individuals. This is clearly not an adequate indicator of the value of education, and in some instances it is nearly impossible to apply (e.g. in the case of assessing investment in new primary schools). If an attempt were made to calculate income differences as between those who attended new primary schools and those who went to older ones, an impossibly elaborate normalising exercise would have to be conducted to adjust for other factors much more relevant to income differences. These problems are even more acute in the context of evaluating the benefits from the spread of comprehensive schools, since income differences observed in the past are not relevant, and with such a pervasive measure it would be difficult to forecast the impact on future income differentials.

All these measures, though relevant as part of the evaluation exercise, are incomplete because they fail to reflect the spillover benefits which are usually associated with the public services. The external benefits of education and health services extend beyond the immediate recipients, and are not reflected in the sums individuals will be willing or able to pay for them. In the case of such 'collective' or 'public' goods, (like the benefits to the community as a whole from immunisation of individuals against infectious and contagious diseases), it is notorbusly difficult to bet accurate estimates of what such provision is worth. The archo-type of such 'collective

or 'public' goods is defence, which has the peculiar characteristics of such goods to an unusual degree. These peculiar characteristics are, first, that an individual's consumption of such a good or service does not reduce the amount available for other (i.e. consumers are not rivals as they are for food, clothing, housing, etc.) and secondly, once such a good or service is provided, it is difficult to prevent any individual from getting it (in the case of defence, whether he wants it or not:). Since the market mechanism must pay for it, that you cannot get it otherwise, and that if you have it you deprive someone else of it, it will be clear that the market mechanism is not well fitted to provide valuations of collective goods, nor is it easy to devise simulated market tests which would serve that purpose. For instance, if people were asked 'how much would you be willing to pay for so much extra defence?" it is likely that there would be systematic understatement, since people would suspect that they might actually be called upon to pay the amount they 'offer', and they will hope that other people's bids will lead to an amount of defence being provided which they regard as acceptable, knowing that once it is provided no one can exclude them from enjoying it too. Thus in the case of 'collective' goods and services it will be necessary for some valuation to be made via political processes of one kind or another.

(iii) How can political and social judgements be incorporated into the valuation process?

At this stage it will be convenient to returned to the notion of the 'shadow price' discussed earlier, there was implied that shadow prices could be calculated by reference to various market phenomena. For instance, the shadow price of labour could be computed as the value of the goods and services which would otherwise have been produced by that labour, or the shadow price of foreign exchange by the extent to which the growth of national output is constrained by shortage of foreign exchange, and so on. But shadow prices could equally well be determined simply as an act of policy. In the case of unemployed labour, it was suggested earlier that its shadow price would be negative if

unemployment were considered a bad thing per se. Clearly, how bad a thing it is in this sense cannot be determined by reference to any market phenomenon, and if such a valuation is to be used it must be regarded as technical device for giving precise expression to a policy judgement. This judgement might be that the community is willing to devote £x of its resources (over and above the actual opportunity cost of labour) to creating new jobs so as to eradicate unemployment. Clearly the higher is 'x' , the greater is the social valuation being attached to the eradication of unemployment per se. This device has the great advantage of making much more precise the weight to be given to various political and social considerations against those which the market itself generates, and thus greatly facilitates both the operation of a decentralised system of decision making, and informed political debate about what these weights should be. It also enables intangibles to be handled alongside other elements in the problem.

An alternative procedure which, in relatively simple cases, will achieve the same objective is to assess the selected projects at various different sets of weights for costs and benefits, so as to discover the particular sets under which each individual project becomes the one to be favoured over the others. For instance, if one town centre redevelopment scheme was particularly strong on the provision of amenity space, another on parking facilities, and a third on floor space devoted to shopes, then there will be some critical relative valuation of these three items which will make all three schemes equally acceptable. The policy makers could then be asked whether they think that (say) amenity space is worth relatively more than indicated by the set of weights which makes all three schemes equal, for if so then the first scheme will be preferred to the others. In more complicated cases hypothetical valuations will have to be introduced, but even in this form this approach still has the advantage that the initial sets of 'shadow prices' are throw) up from within the analysis, thus giving the policy makers a much more clearly defined set of issues upon which to exercise their judgement.

(iv). How important is consistency?

There is a further consideration which is of some importance with respect to the use of 'shadow prices' as a means of conveying social valuations, whether these are expressed in absolute terms(i.e. in explicit financial

values) or in relative terms (i.e. in the form of value-ratios or trade-offs between one item and another). It is a matter of some consequence to ensure that whatever valuations adopted as the proper expression of policy judgements shall be applied consistently in all fields of governmental activity To do otherwise would be to pursue the objectives of public policy in an inefficient manner as can be seen by considering the following illustrative example. Suppose that one government department (department A'), in pursuing a policy of creating jobs in areas of above average unemployment, accepted a 'penalty' of £x over and above costs elsewhere, while some other department (B') accepted a penalty of £2x and yet a third ('C') no penalty at all. These 'penalties' are (implicitting the social value of eliminating unemployment in development areas as opposed to elsewhere. If each department then pursues its own policy effectively, then the marginal job created in the high unemployment area by department a will have cost the community £x, that created by B £2x, and that created by C will have cost nothing, over and above the costs elsewhere. This means that there are presumably jobs which could have been created in the field for which department C is responsible which would have a penalty cost somewhat less than £x, while department B is accepting much larger penalities to the same end. Clearly more jobs could be created for the same cost if fewer were created by department B and more by department C, and this will continue to be true as long as the cost of creating the marginal job differs between them. If all three departments were applying the same 'shadow price' and making it effective at the margin, then the policy of creating jobs in areas of above average unemployment would be conducted more effectively.

However, this general argument for consistency, in the cause of efficiency, should not be interpreted as an argument for too sweeping uniformity through excessive averaging Returning to the example of unemployment, the setting of a shadow price for reduction of unemployment, to be used by all departments, does not have to be bound by the various prices implied by past decisions, and it could be made automatically variable with levels of unemployment or with any other factors held to be relevant, as well as being variable through time on a discretionary basis as a means of expressing a changed emphasis in overall policy on this matter. Nor is it necessary for the same 'price' to be set for all regions, or for jobs in all industries, if there is reason to suppose that the social value of creating additional jobs varies from one to another. The important thing, for the effective pursuit of policy, is that these valuations be made explicit and be applied consistently.

THE RATE OF DISCOUNT

Of all the current issues in cost-benefit analysis, none is more complex or far-reaching than the choice of a suitable discount rate. This has made it necessary, for present purposes, to cover only some of the main areas of discussion. In the particular, no attempt has been made to discuss the problems involved when returns from a project are reinvested or to the particular way in which a discount rate should be applied (the merits of present values versus internal rates of return have not been delved into).

(i) why should future social benefits and costs be discounted?

In assessing public investment projects, it is necessary to have some measure of the community's view of the value of extra consumption (in the sense of an increment of the general living standard) in the future as compared with the present. The application of a discount rate implies that the community values benefits and costs falling at different times differently; a positive discount rate (alternatively called a positive rate of time preference) implies that the community prefers consumption today to consumption tomorrow. In every-day life, individuals take decisions which reflect their rates of time preference, for instance, in the choice of jobs offering differing time streams of earnings (e.g. high pay at the beginning but poor prospects of advancement versus of a low starting salary but good prospects of advancement) and in the choice of consumption streams within the overall earnings constraint (e.g. whether to save out of earnings to finance higher consumption levels later, or to borrow against future earnings to support high consumption levels earlier on). The value which any individual puts on extra consumption in the present relative to that in the future (his time-preference rate) is defined as that discount rate 'r' which makes the individual equally satisfied with £$(1+r)^n$ worth in the present. This interest rate, averaged over all individuals, is usually thought to be positive because even after risk and uncertainty have been excluded from consideration, individuals are thought to have either a 'defective telescopic faculty'* or the expectation of a rising income. The expectation of a rising income, combined with diminishing extra satisfaction with equal units of after-tax extra income as an individual moves up through the higher income ranges, may justify a positive time preference rate for a large number of individuals.

* The classic source of this doctrine in the English literature is A C Pigou, The Economics of welfare, Macmillan, London, 1924, pp 23-30.

The risk-free rate of private time preference, even averaged overall individuals, is not usually regarded as directly relevant to public investment decision. Decisions concerning whether or not the community is to consume or save and invest for the future are by their very nature collective The individual has no direct means of influencing the consumption saving decisions of other individuals, which may be relevant to the amount of saving he is willing to do for thesake of the future benefit of the community. The interdependence of the decisions of individuals means that the future benefits of public investment may be likened to a public good - - on certain not unrealistic assumptions it is possible to make all individuals better off by under taking more investment collectively, than there would be if each individual were to make a privately assessed contribution to public investment from his current consumption. Thus the rate of social time preference (the ST rate) is something rather different from the private time-reference rate or any amalgam of private rates. It (rather unhelpfully) follows that the STP rate can not be derived by any simple proces from any set of rates which are thought to represent private time-preference rates(e.g. the risk adjusted inflation-profed rates at which invididuals are willing to lend money). In practice, the STP rate will be set explicitly or (more likely) implicitly by administrative orpolitical decision, which the individual can influence only by voting or by other forms of political pressure. The STP rate will usually be set implicitly rather than explicitly because administrators and politicians are more likely to be concerned with the choice between high rates of investment as against more current consumption, than they are with so apparently nebulous a concept as the STP rate itself. None the less when decisions are made about the desirable overall level of investment, a view has been taken of the magnitude of the STP rate.

(ii) How relevant is the rate of return on private investment to public investment?

From th community's point of view, a situation where resources were being devoted to projects in the public sector, which might have been used to exploit investment opportunities with higher social returns in the private sector, would obviously be an undesirable one. Leaving aside the question of the optimal total amount of investment, it is therefore necessary to consider suitable criteria for deciding upon the best distribution of investment as between the public and private sectors.

The most obvious first step is to ensure that the returns from private sector investment are being compared on a similar basis with the returns from prospective public projects. When a private firm conducts an investment appraisal, it looks only at the streams of revenues and expenditures associated with the project. When the Government conducts an appraisal of a public project, however, this is (or should be) done in terms of social costs and benefits and not solely in narrow financial terms. In order to compare the worth of any prospective public project with those which might be undertaken in the private sector, it is necessary to assess the social costs and benefits which stream from the best alternative private projects. The rate of returns resulting from this assessment is known as the social opportunity cost (SOC) rate of interest; it is a measure of the cost to the community of undertaking a public project instead of the best alternative private one. There is no reason to believe that this will necessarily correspond with private financial rates of return as reflected, say, in (perfect) market rates of interest. The yield on any financial asset is thus an inadequate reflection of the net benefit foregone when a public project is undertaken rather than a private sons.

(iii) Why should the social opportunity cost of private investment differ from the private opportunity cost?

There are two main potential causes of a difference between the rate of return to a private investor from private investment and the rate of return to the community. The first and most obvious of these is that there may be benefits or disbenefits to others besides the individual private investor by whom a private project is undertaken. One classic example of this type of 'externality' is that a mine-owner who installs a pumps to lower the water level in his own mine and unavoidably benefits the owner of the mine next door by reducint the ammount of pumping his neighbour needs to do. From the point of view of the community, both benefits should be included in the rate of return from investment in a pump, but from the point of view of the investing mine-owner, only the extra revenue (or reduced cost) which he obtains for himself is relevant.

because the benefits toneighbouring mine-owners would have been ignored. Conversely, the remay be disbenefits from private investments (such as noise and dirt emanating from a factory) which would tend to make the SOC rate lower than the private opportunity cost of not undertaking private investment. There is no firm ground for saying whether the SOC rate is above or below the 'average' private opportunity cost rate on account of externalities.

The other main factor causing a potential divergence between the OSC rate and private rates of return is the existence of Corporation tax and subsidies to private rates of return is the existence of Corporation tax and subsidies to private investment (e.g. investment grants). To the extent that these have the effect on balance of lowering the private return from investment, the OSC of not undertaking private projects will exceed the private returns foregone.

In a country with a 50% rate of Corporation tax, and no offesets such as investment grants or other subsidies to investment, the SOC rate of interest will tend to be double the private after tax returns from new investment to companies. The OSC rate is not adequately reflected, as has sometimes been suggested, in the (risk-free) rate of interest on Government bonds, because, in order to attract capital, the investment of private companies may have to yield much more than this before tax just in order to provide a return to shareholders equal to that on Government bonds. Externalities aside, it is the total return to private investment which reflects the social valuations of the extra output stemming from private investment, not the after-tax return.

A third factor which might be thought to cause a divergence between the SCC rate and private rates of return is the risk element, which makes risk-averting private investors seek a higher rate of return that they would in a risk-less world. From society's point of view, it is arguably irrelevant whether five £100 projects in the private sector yield a 10% return each or whether four yield nothing and one yields a 50% return. From the private investors view point however, a certain 10% return is usually to be preferred to a one-in-five change of nothing. Since the normal run of projects involve at least some risk, private investors

will not invest unless the prospective return on an investment is somewhat higher than it would be in a riskless situation. But it is just because private investors insist upon a risk premium that such an element should also be included in the SOC rate. Otherwise the social returns from private investment, which might be viewed as riskless from the community's point of view, will be under-valued. Thus there should be no divergence on the SOC rate and private opportunity cost rates on account of risk.

(iv) Which rate should be chosen to discount the costs and benefits of a particular project?

As far as cost benefit analysis is concerned, this is the cru of the discount rate issue. Unfortunately, there is no universally accepted view concerning the choice of discount rate even in principle, and this reflected in the widely differing magnitudes of discount rates suggested by various schools of economists as suitable for discounting the returns from actual public projects.

The differing views of economists have largely stemmed, on the one hand, from concentration on the optimal amount of investment overall (and the STP rate), and on the other, from concentration on the distribution of investment between the private and public sector (and the SOC rate). The situation is complicated further because some economists favour using both those rates in discounting and there are still others who would use neither. Of the many views on the choice of discount rate, three only will be (briefly) explored here: (1) alternative expenditure displacement, (2) functional finance; and (3) implicit discount rates.

The alternative expenditure displacement view holds that public investment can be considered in a fully employed economy, as displacing other forms of final expenditure (e.g. consumption) and that the discount rate applied to the stream of benefits from a public project should be derived from the returns from the particular forms of final expenditure which would have taken place if the public project had not been undertaken. In practice, this would mean that the means of financing (whether by taxation, borrowing or otherwise) prospective public projects would had not been undertaken. In practice, this would mean that the means of

financing have to be examined in order to trace the source of the resources to be used. To the extent that these were found to have to come from current consumption the discount rate applied would be the STP rate (as the indicator of the relative value of consumption foregone in the present compared with benefits to be obtained from a project in the future). But in the extent that resources were found to have to come from investment, the SOC would be applied to estimate the frustrated streams in future consumption foregone by not undertaking the alternative private or (other public) investment. Finally, the STP rate would be applied to this frustrated stream of future consumption in order to obtain its present value. Discounting because of foregone consumption in the present would thus be done in some stage; discounting because of foregone investment would be a two-stage process.

It is evident that the displacement approach involve a number of assumptions. Most importantly, it assumed that the analyst must take the Government's policy towards private investment as given. The analyst may have selected by this method the highest return 'public' (the public sector being constrained to certain investment fields only) project available, and its construction may leave the community better off than it would be otherwise. Yet it is possible that still better investment opportunities may remain unexplicited in the private sector.

This approach is objected to by the functional finance school, partly because of its near impossibility of application (its proponents willingly concede that it is a counsel of perfection), but mainly because it is held undesirable to build into policy a 'misallocation' of investment as between the public and private sectors. The functional finance approach would ignore the means of financing public projects altogether as irrelevant, since it is argued that the Government should in principle be able to control the balance of private investment and consumption, and should not follow a policy of undertaking projects in the public sector when projects which yield a higher social return might be undertaken in the private sector. Therefore the SOC rate, it is held, should be used in preference to the STP rate (which is thought to be lower than the SOC rate); no additional element need be included in the calculations which specifically allows for the community's rate of time-preference for consumption now as compared with the future.

A possible way out of the theoretical dilemmas and practical difficulties connected with the choice of discount rate has been suggested by some economists. This involves examining past choices made by decision-takers about projects, making an attempt to estimate the prospective rate of return which these projects were expected to yield, and locating where the cut-off point has been. Propositions of the following hypothetical from might then be put to decision-takers; "If you undertook X on the grounds that its social rate of return was satisfactory, then you should also undertake Y". There is no reason to expect, however, that politicians and decision-takers will always choose to be bound by past decisions and indeed, on a theoretical level, there is no reason why the SOC or STP should not vary through time. Nonetheless, the analysis of past decisions and the implicit cut-off discount rate derived from them -- can be a guide to making consistent decisions, even though these will not be founded on any absolute criterion.

(v) should the same rate apply in all fields?

Interpreting the discount rate as a measure of the differing values placed upon inputs and outputs according to the time at which they are committed or enjoyed, we are led to ask whether there is any reason to assume that these relative inter-temporal valuations will be the same for all inputs and outputs. For instance, why should a beautiful view decay in value at a rate of 8% p.a. just because that is the rate at which we think a colour television set does? Is there not a good case for applying a much main purpose is to conserve or create good things for distant posterity, while applying a higher rate to projects with a shorter time-horizon?

This question needs to be tackled in two stage. The first concerns our expectations about general living standards, and the second our expectations about its individual components Our normal expectation is that living standards generally will rise, so that increases in current living standards are more valuable than increases in future living standards, for 'we' are the poor and 'they' are the rich! However, the satisfaction of current demands is not an absolutely over-riding consideration (unless we expect that the end of the world is imminent!). What we have is a rough idea that it is not worth. Sacrificing more than £(1+r) of income next year to get £1 this year, 'r' representing our rate of time preference, In this sense the rate of time preference applies equally to all components of our living standard, although we do not

normally think it through so articulately as implying a trade-off (inter-alia) between disparate things like beautiful views later and television sets now, as well as between more homogeneous choice such as food later and food now.

In addition to this attitude towards future increases in our general living standard, we may also have views on changes that are likely to occur in our valuation of specific items. For instance, as we all get richer, we may come to value leisure activities more highly in relation to food and shelter than we do now i.e., there will be a demand shift in favour of goods and services associated with the enjoyment of leisure. Thus we may expect that certain goods and services, like areas suitable for peaceful outdoor recreation will become relatively much scarcer than they are now, and hence rise in value even if the demand for them remains unchanged. These shifts in relative values need to be superimposed upon the effects of changes in general living standards, and may, in some cases, more than outweigh them. Thus we may find that the preservation of historic buildings provides benefits to the community which rise in value through time despite the general effect of discounting, because the community is coming to attach greately relative weight to this component in its living standards than it does at present.

It is important to keept these two influences segregated in a cost-benefit analysis, because if they are both assimilated into a single (adjusted) discount rate, this rate will apply to all the inputs and outputs associated with a given project, and not just to th one to which it is tailored. it is much better to apply the (generlised) rate of time preference as the discount rate, and deal directly with changes through time in the relative values of different components by explicit adjustment in the values placed on such costs or benefits.

RISK AND UNCERTAINTY

should higher discount rates be used for riskier projects?

Adding premia to the discount rate to allow for differences in riskiness is a convenient device which, though widespread, is of dubious validity in principle, and may well have deleterious results in practice. The argument adduced to support this use of the discounting procedure, as the vehicle by which an allowance for risk uncertainty is imported into the analysis, is that since we are less and less sure about the estimates that go into any project appraisal as they come to depend on events more and more distant in time, a higher discount rate will reduce the weight given to the more distant transcations, and hence reduce the sensitivity of the overall outcome to likely (but unknown) errors in forecasting the remote future. Support for this procedure is also sought from the knowledge that in order to get people to invest in .....

riskier projects in the private sector it is usually necessary to offer them higher prospective rates of return, so, by analogy, this would justify the use of higher rates for riskier projects in the public sector too.

It will be argued here that neither of these propositions provides adequate supportfor risk premia to be added to the discount rate in cost-benefit studies. In the first place, not all the phenomena associated with a particular project will exhibit the pattern of 'riskiness' which is implied by raising the discount rate, yet the discount rate will be applied to all aspects of the project, even those which can be estimated with near-certainty. A second, more pragmatic, reason for resisting the use of 'risk premia' is that by appearing to deal comprehensively with risk and uncertainty, in a manner which reduces these phenomena merely to a minor technical adjustment in computations, it will also appear to make unnecessary any closer analysis of the effects on the overall position of possible errors in the estimates of individual items in the project appraisal. The analysis will thereby not only have obscured important issues which ought to have been clearly identified and investigated, but they will also implicitly have arrogated to themselves the weighing of the various risks, when that judgement is essentially the task of the decision makers themselves.

(ii) If there is to be no 'risk-premium', how can risk and uncertainty be incorporated into the analysis?

Before discussion other proposed methods of dealing with the pervasive phenomena of risk and uncertainty, note must be taken of the respective literature on the subject. 'Risk' is used to refer to situations where, although the outcome with respect to some phenomena which affect the calculations is not known or expected with certainty, the estimators at least have some idea, in probabilistic terms, of what the range of possible values will be.

On the other hand, where 'uncertainty' present, the estimators are not even able to be this precise, and will only know that more than one value is possible, without being very clear about how probable the various possible values are. An example of the phenomenon of 'risk' might be a good statistical estimate of some trend in the use of a facility, to which one can append 95% confidence limits giving upper and lower bounds with rather precise probabilistic attributes. An example of 'uncertainty', by contrast, might be some major technological breakthrough such as finding a cure for cancer, which is believed to be 'one the cards', but the timingand extent of which no one is in a position to predict. It is known however that if it occurs within the physical life of the project under consideration, then that project will be rendered prematurely obsolete. The chief characteristic of such uncertain projects is ignorance of the probability distribution of possible outcomes - which is always a disadvantage.

Clearly, in order to meet the objections raised earlier against the use of comprehensive adjustments like adding a risk premium to the discount rate, we need devices which can be applied to individual benefit or cost items, and which reflect the particular kinds of risk or uncertainty which attach to them individually. This presupposes a through scrutiny of the assumptions (implicit as well as explicit) upn which each estimate is based, with a view to answering the question 'what could go wrong here?' Three main devices will be considered here as useful ways of incorporating the results of this questioning into the overall analysis of the project. The first will be the use of 'expected-values' the second the use of 'sensitivity-analysis', and the third the adoption of more full-blown decision-theory techniques.

(iii) What advantages does an 'expected value' have over any other point estimate?'

There is clearly considerable computational advantage in having asingle figure to work with in a project appraisal rather than having to manipulate a whole range of alternatives for each item. Typically a 'best estimate' will frequently be based on notions which resolve essentially into the statistical concept of the model point in a frequency distribution of outcome by probabailities. This probability distribution may be very flat and widely spread, or it may be sharply-peaked and narrowly-spread so that in the former

case the 'best estimate' will be both more likely to be wrong and likely to be wrong to a greater extentxxx than in the latter case. Moreover, the probability distribution may be distinctly skewed, i.e. the dispersion of alternative outcomes will not be symetrical about the model point, in which case the 'best estimate will be more likely to be wrong in one direction than in the other. It is therefore argued that each possible outcome should be weighted by the probability attaching to it, and the sum of these weighted outcomes added together to give the mathematically (or acterially) 'expected-value' for that item.

This clearly has the advantage over the most likely or model point estimate that it takes the whole probability distribution into account, but in the case of perfectly symmetrical singlepeaked distribution it gives the same answer; it does not differentiate between sharply-peaked and relatively flat probability distributions of possible values. This brings us to the issue of whether point estimates should be abandoned and possible range of outcomes set out explicitly instead.

(iv) Is it worthwhile to go beyond point estimates?

Once one moves away from point estimates one is multiplying the amount of computational work in any project appraised so that xxxfxxx before doing so one needs to be confident that the return is likely to be commensurate with the extra effort. Unfortunately, it is not possible to answer this question satisfactorily without actually abandoning point estimates anyway. However, in an age of electronic computers we are largely emancipated from the sheer medium of time consuming arithmatic; it is the effort of getting data on which to form dependable alternative estimates thatnow is more frequently our main problem. Acceptance of the need to make alternative estimates open up a useful screening device which will tell us where to devote our energies, for we can vary the point-estimate in a fairly levels which we think might be possible) to see which of the estimates are critical for the overall outcome. By thus testing the sensitivity of the results to varying assumptions of different likelihoods we would hope to finish up with a manageably small agenda of items which appear worthy of more detailed

scrutiny*.

It is also frequently said that once the analyst departs from point estimates, the result is a confusing welter of alternatives, between which the decision-makers is unable to distinguish by any rational criteria, so that any of the following outcomes may ensure:

(a) the analyst is asked to climb down off his fence, and clarify the situation by indicating quite an ambiguously what his best guess is;

(b) somebody else is asked to provide a succinct summary of the main conclusions of the analysis, in which case he will probably select the point-estimating that he thinks are the more 'realistic'.

(c) the decision makers inspects overall outcomes, and 'selects' that set of assumptions which leads to the outcome he likes best.

It is then argued that if the outcome is (a) the analyst might just as well have stuck to point estimates in the first place, that in case (b) someone else's inexpert assessment of probabailities is being substituted for that of the people who have worked on the data, and that in case (c) the analyst has merely allowed himself to become an elaborate piece of intellectual window-dressing. So all in all, it is better to keep it simple.

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* The case of premature obsolescence due to technological advance, mentioned earlier in connection with the treatment of cancer, could be dealt with in this way, viz. by testing the sensitivity of the appraisal to project life, so that one would say that the project will be worthwhile provided a cure for cancer is not found within (say) 5 years.

In a short-term tactic the attractions of this argument are difficult to resist, but as the basis of a long-term strategy they have little to recommend them. It is not the analyst's job to pre-empt the responsibility of the decision maker to define his, or his organisation's attitude towards particular risks. While the policy maker cannot be expected to welcome an analyst's report emphasising certain excruciating uncertainties which have explicitly to be accepted or rejected before a decision can be reached on a particular project, he will not subsequently have much faith in his analysts, or their techniques of analysis, if their report leads him unsuspectingly into courses of action which prove disastrous, simply because the analysis obscured the impact of certain crucial assumptions which proved to be ill-founded, and which careful analysis at the time would have shown to be both crucial and suspect.

(v) What are the penalties for being wrong?

We are now on the threshold of a further analytical step, that of introducing into the analysis some explicit evaluation of the cost of making different sorts of mistakes. For instance, in fields such as electricity generation, the penalties incurred by society if capacity is under provided by, say 5% may be much greater than the penalties incurred if a corresponding amount of excess capacity is provided. In order to provide decision makers with an adequate appreciation of the risks they are running, it is necessary to set out the consequences of particular decisions in a variety of possible 'states of nature' even if one cannot say with any precise what are the respective likelihoods that each of the 'states of nature' will occur.*

It is then up to the decision makers to formulate their attitude to these risks. They may be extremely cautious so that the 'decision rules' they generate will be ones which reflect minimise the damage done if every thing goes wrong, even if this means sacrificing a great deal of the potential benefits to be derived if things went right. Conversely, they may willing to accept the risk of heavy penalties if things go wrong in order to achieve a major breakthrough on the benefits side given a moderate run of luck.

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* This 'game-theoretic' approach to problem formulation and analysis was described in C.S Occasional Paper No.6, "The Elementary Ideas of Game Theory" by M.H Preston and C Coddington and its implications are further developed in the broader context relevant to this paper in C.S Occasional Paper No.7 "Statistical Decision Theory", by the same authors.

It is not for the analyst to tell the policy maker what his decisions rule should be, but only to ensure that the policy maker is aware of the consequences and implications of adopting any particular rule.

Yet further analytical difficulties may arise when it not simply a matter of making a 'right' or 'wrong' decision now, but rather one of making a decision now which is only a partial commitment, in the sense that it is not totally irrevocable, but which does nevertheless close certain options. These are often the most excruciating of the problems facing policy makers, and the most straightforward tool available to analysts to lay bare this aspect of a decisions' structure is the use of the decision tree**. By exhibiting the expected time sequence of events and decisions, and by attaching benefit and cost estimations to each stage the decision maker is better able to comprehend what scope he is leaving himself for subsequent revision of his chosen course of action, and at what cost (in terms of potentially beneficial outcomes precluded) he is maintaining this room for manoeuvre.

Effects on the Distribution of Income

It is necessary to identify the incidence of benefits and costs between different groups within the community?

Most cost-benefit studies that have been completed so far have not been concerned to identify the impact of projects upon the fortunes of particular groups within the community, but have been content to sim the benefits (to whoksoever they accrue) and sum the costs (on whoksover they fall) and simply to compare the two. This may well be an

** A simple exposition of the use of decision-trees in a context similar to that under consideration here is to be found in two articles by John F. Magee, "Decision Trees for Decision Making" Harvard Business Review, July/August 1964, and 'How to use Decision Trees in Capital Investment', Harvard Business Review, 1964.

acceptable classes of project in which this would not be satisfactory: those projects which have as their objective some redistributive effect (e.g. providing services for some target group at the expense of another target group) and those projects which might (quite incidentally) seriously disadvantage a particular group of people. In such cases a simple summation and comparision of costs and benefits over the whole community will conceal features in which the decision makers will be critically interested.

In the former case it is clearly necessary to ensure from the outset that analysis is so designed that data will be collected that indicates whether the intended beneficiaries will in fact benefit, and by how much and whether the intended bearers of the costs will in fact be those who actually bear the costs and by how much. This is more easily said than done, however, as the long and controversial history of attempts to measure the incidence of taxes show. It may well turn out that it will not be possible to go beyond identifying the impact, or 'formal incidence', of a project, eschewing the complications that ensue once one tries to estimate what people's reactions will be, how they may 'shift' part of the immediate cost-burden by their own responses, or have part of the immediate benefits shiphoned off by the reactions of others.

In the latter case things argues that such distributional effects can be incorporated into the analysis by adopting a system of 'weights' which reflects the social value placed upon additions to (or subtractions from) the real income of different groups in the community. Thus costs borne by (and benefits received by) some relatively 'under-serving' group might be multiplied (say) 0.7 and those accruing to some 'deserving' group by (say) 1.5 and so on, and from then on one could proceed by simple summation as before. This does meet the case formally, provided that the relative social value attached to marginal changes in real income remains constant at the indicated respective levels. But where do these weights come from? If the 'deserving' means 'the poor' and the 'underserving' the 'rich', one might take the net-of-tax proceeds to the recipient to the recipient of an additional unit of gross income. Thus, for someone with a marginal income tax rate of 90%, the weight would be 0.1, while for someone paying no income tax it would be 1.0. This approach obviously relies on the accuracy of the income tax schedules as expressions of society's view as to the relative social value of additional real income.

Sometimes, however, the 'deserving' V.&. underserving' categories will be less directly related to individual personal incomes, as, for instance, when it is inter-regional distribution of costs and benefits which is at issue. This is not the place to investigate the 'implied preference' or 'shadow price' of raising the real incomes, or creating jobs, in some regions rather than others, except to note that this is another important distributional effect which can be incorporated into the analysis by an appropriate system of 'weights' providing that some mechanism can be devised for producing such weights. It may well turn out that the only acceptable method of so doing turns out to be to get the policy makers to state explicit weights of their own. This approach usually runs into difficulty that they are unwilling to do so, though this should not deter the analyst from trying to get them to be as explicit as possible.

(ii) How do compensation arrangements bear upon the analysis?

A second line of argument that is sometimes encountered in this field is that since the community has already set up a mechanism for making compensation payments in cases where this is felt to be necessary, these, and only these, cases need to be taken into account. The major weakness in this position is that the compensation arrangements may well be universally regarded as inadequate in the particular field in which the analysis is being conducted especially if it concerns phenomena of relatively recent origin (like aircraft noise) which the present legal-administrative arrangements for compensation were not designed to handle, or which on other grounds of public policy have been specifically excluded from the realm of compensation. In such cases there can be no denying that some people are worse off and that the community as a whole might regard them as deserving, despite the fact that society has not made formal arrangements to compensate them. Thus, since we are seeking ways of measuring extent to which people are in fact better off or worse off, it is dangerous to assume a priory that this will be exactly the same as the extent to which the system will itself countract by compensation and taxation any changes in their welfare.

This argument about actual compensation arrangements as a counter-redistributive mechanism is to be distinguished from an apparently similar one concerning the use of compensation tests as a means of estimating the extent to which people are adversely affected by any particular project. If one is trying to estimate the loss of welfare imposed on a local community by having say a new prison or airport located nearly, it is illuminating to seek answers to such questions

as 'how much would you be willing to accept as fair compensation for having to put up with it? or 'what would be the cost to you of avoiding its impact (say by moving)?' Each of these questions would probably yield a different answer, depending partly on the existing distribution of income and partly on the intensity of people's aversion to the prison or airport. Yet each of them gives an indication of the welfare loss suffered by the parties concerned, and it is for this reason that the questions might be posed, and not because compensation (or bribery) is actually being contemplated. This highlights the major weakness of the approach, which is that it is very difficult, if not impossible to bet people to reveal their 'true' views in this sort of enquiry, and there is likely to be systematic bias in any answers received because of the incentive to exaggerate or minimise the sums involved according to where the respondents' interests lie.

The safest course for the analysts to pursue with respect to distributional effects would therefore seem to be to identify the relevant groups in the community (in conjunction with the decision makers), and to estimate as far as possible the distribution of costs and benefits between them. Any consequential impact of existing taxes, subsidies, compensation arrangements, etc. Upon the respective parties can then be shown explicitly also, and the net redistributive effect presented to the decision maker along with the other results of the analysis. It will then be possible to carry out such further manipulation of this data, via weighting devices of some kind or other, as may be regarded as desirable and acceptable.

CONCLUSION: COST-BENEFIT ANADYSIS AND DECISION MAKING.

The Role Retained by the Decision-maker.

In the preceding sections, some of the main issues of principle in cost-benefit analysis have been briefly explored, and a tentative view has been expressed on the merits of the alternative approaches to some of the more important unresolved questions. There remain many areas for dispute especially in connection with the significance of various discount rates and their suitability for particular applications. Even if this were not so, and even if economic efficiency in the narrowest sense were conceded paramountly,

cost-benefit analysis would not provide the administrator with a means of relieving himself of cricially important decisions. In fact, decision makers might well beware of experts who helpfully simplify their job by making implicit decisions in the course of their analysis; these may include some which later turn out to be wholly unrealistic or unacceptable. during the course of the consideration of the set of circumstances relevant to any project decision, the administrator has an important role at each stage. Questions such as 'what benefits or costs are to remote in time, location or from the main purpo of the project' or 'what is the appropriate shadow price of foreign exchange' can be settled ultimately on by administratively or politically determined criteria. Indeed the most fundamental choice of all which items should be counted as costs and which as benefits -- depends upon the point of view of the 'client'. The schematic flow chart below is an attempt to summarise the functional sequence of the main steps to be taken in the appraisal of a project; it does not necessarily represent any chronological sequence. It serves to illustrate the roles of the cost benefit analyst and the decision taker, and their inter-dependence. It will be seen to be based on the STP view of discounting which reflects the authors' own standp oint, but it could be suitably modified to accomodate other schools of thought. The advantages of cost-benefit analysis lie not in making decision making simpler, but in the possibilities for the systematic examination of each part of a problem in hand, for putting diverse decisions on a par, and for following the logical consequences of a synoptic view. In short, it is a means of organising thought, not a means of avoiding it!

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PLANNING, PROGRAMMING AND BUDGETING SYSTEM (PPBS)

DR.M.J.K.THAVARAJ

What is PPBS?

PPBS is primarily a system to help decision-makers allocate resources. David novick defined PPB as the sum of the steps or inter-dependent activities which enter into the attainment of a specified objective. The programme, therefore, is the end objective and is developed or budgeted in terms of all the elements necessary to its execution.

Planning refers to the definition of missions, goals and objectives, the identitication and evaluation of alternatives and the choices among the alternatives.

Programming refers to the 'link' between planning and budgeting: It involves the documentation of decision on resources requires and outputs to be achieved, scheduled over the years involved in the planning period; and the accompanying information and documentation systems.

Budgeting refers to the process of translating the decisions programmed in the long-range planning format into the annual budget format, with the more precise measures of inputs, price tags and outputs which are possible and necessary when you are looking only one year ahead.

Objectives of PPBS

As Prof. Jesse Burkheal puts it, program budgeting (PPB) in its recent evelution has three partially separate objectives:

(i) TAXONOMIC - The classification of government activity in terms of goals and objectives;

(ii) ANALYTICA - The comparison of costs with outcomes and the exploration of alternative means for achieving outcomes;

(iii) PROJECTIVE- The long-range planning of government programmes. Benefit cost analysis is concerned with the second of these objectives.

According to Rowe the system is designed to enable each agnecy to:

(i) Make available to top management more concerate and specific data relevant to broad decisions;

(ii) pell out more concretely the objectives of Government programs;

(iii) analyse systematically and present for agency head and Presidential review and decision possible alternatives and alternative programs to meet those objectives;

(iv) evaluate thoroughly and compare the benefits and costs of programmes;

(v) produce to-tal rather than partial cost estimates of programmes;

(vi) present on a multi-year basis the prospective costs and accomplishments of programmes;

(vii) review objectives and conduct program analysis on a continuing, year-round basis, instead of on a crowded schedule to meet budget deal-lines.

In the United States the entire system operates within the framework of over-all policy guidance -- from the President to the agency head, and from the agency head to his central planning, programming and budgeting staffs and to his line managers.

The various steps involved in PPBS are meant to cover some of the glaring deficiences the earlier budgetary practices such as:

(1) imprecise statement of missions of an organistion;

(2) weak data base and analytical tool for rational allocative decisions:

(3) imperfect costing of programs;

(4) inadequate articulation of planning and budgeting

In the words of the Circular No.A - 11 of the bureau of the Budget:

> "Under the present practices, however, programs review for decision-making has frequently been concentrated within top short a period; objectives of agency programs and activities have top often not been specified with enough clarity and concreteness; accomplishments have not always been specified concretely..., alternatives have been insufficiently presented for considerations by top management; in a number of cases the future year costs of present decisions have not been laid out systematically enough; and formalised planning and systems analysis have had too little effect on budget decisions."

In particular, the PPB attempts to bring together in a coherent way the planning activites of the Government with the budget process. In the words of Rower:

> "Planning separated from budgeting tends to be a sterile exercise; budgeting separated from planning tends to be short-sight and not well enough informed. It is vitally important that these complimentary activities be linked".

Thus PPB focusses attention on the need to intergrate multi-year planning and programming with the budgetary process where the broad programme decisions are translated into more refined decisions in a budget context.

PPB in the Department of Defence

Before the introduction of PPB institutionally and operationally, planning and budgeting have run along separate tracks. Planning was generally oriented towards the development of new weapons systems, programming, that is, the time phasing installations, was separated from both planning and

budgeting. And there was no systematic evaluation of costs. In partcular, there was no articulation of relationship among Research and Development (R&D), installation and operating requirements. Thus, the primary aims of the new system were to permit analysis of total forces structures for all of the services in terms of common missions or national objectives and to project the resources impact (or financial requirement) of the proposed force structure over an extended period of years.

The process of PPBS as was introduced by McNamara in the Department of Defence had three phases: (1) Military Planning and Regimental Determination: (2) Programming: (2) Budgeting.

The first step in military planning and requirements determination is for the President to determine politically the broad dimensions of military requirements over the years. On the basis of this the Chiefs of Staff prepare their predetermined political objectives on the basis of which an 8 year plan for military requirements is chalked out without reference to specific resources costs. This is reviewed annually by Secretary of Defence based on major cost-effectiveness studies. He then issues a tentative force guides which constitutes the baseline for the formulation of 5-year program for Defence. These guidelines are transmitted to the servicies The DOD, then prepares draft memoranda on each major mission area and support activity. These studies are reviewed by the Secretary of Defence and the Joint Chiefs of Staff, who evaluate the various issues on the force levels.

The programme structure in Defence is in terms of missions, forces and weapons, support assistance and analytical comparisons of alternatives. This has been changing from time to time. The program structure for 1970-71 is in terms of strategic forces; general purpose forces, intelligence and communication, airlift and sealift, guard and reserve forces, research and development, central supply and maintenance, training, medical and other general personnel activities, administration and associated activities and support of other nations. These 10 programs comprise about 1000 programme elements. A programme element is defined in terms of an integrated force or activity, for example, a B-52 Bomber together with relative manpower and equipment required to keep the bomber operational. Other such examples are attach carriers, F-4 flighter wings, manned obting laboratory and so on. The approach to the costs and program elements is comprehensive and it includes all direct supporting costs.

Program Packages

The program elements are related to the larger missions such as missle defence. Where possible research and development programme elements are associated with major programmes. Those which can not be associated in this way are brought under general research and development.

The basic document in the Department of Defence is the Five Year Defence Plan which incorporates planning assumptions and the projection of the implications of past decisions. The Five Year Plan is based on program and cost projections. As mentioned earlier within classification of program and program elements the Office of the Controller of Department of Defence initiates studies of the cost-effectiveness or a cost utility of specific weapons systems. These analyses are generally undertaken to estimate the relative cost of the achieving specified levels of deterrant strength or force structure based on the careful examination of the alternative means that are available for attaining stated objectives. Systems analysis and Operations Research as well as cost-benefit analysis constitute the important techniques for such analysis. These studies constitute an important vehicle for the analysis and debate on policy issues within the department of Defence and these studies result in a series of draft Presidential memoranda prepared by the Secretary of Defence.

Budgeting for Defence is done jointly by the Controller's Office and the Bureau of the Budget. They link programs and costs to the appropriation structure. Budget is the financial implementation of the first year of the Five Year Defence Plan. Proparation of the Budget requires attention. Procurement list, production schedules, lead times, prices and status of funds. As it stands today appropriation structure is not re-aligned with the program structure. This necessitates a great deal of cross-work between organisations at the time of budget making. Any change in the program can be proposed as and when it is felt necessary. Changes for cost variance are to be approved by the Secretary of Defence. This can occur during the execution of the budget. Such a procedure for program change proposal introduces an amount of flexibility within the Budget Year, i.e. changes may be proposed and approved at any time and there is continuous updating of 5-year projections.

PPBS Outside Defence

Though PPBS experiments had been started in the Department of Defence since 1961 its extension to other functional areas was intiated by President Johnson only in 1965. There are 13 functional areas in the U.S. Government including Defence. Each functional area is broken into a few programs and sub-programs which constitute groupings, that serve the same broad objectives. Programmes are further divided into several programme elements. As noted earlier there are about 1000 programme elements in Defence, there are hundreds of others relating to other departments. For instnace, in the Department of Health, Education and Welfare, there are five programs, Viz., Executive Direction and management, Education, Health to the Social and Rehabilitation Servides, and Income Security. Education is further broken down into the following sub-programs: Development and Basic Skills, Development of Occasional and Occupational Skills, Development of Academic and Professional Skills, Library and Community Development, General Research (non-allocable), General Support, Development of Occasional and Occupational Skills have three program elements viz., improving the education of the general population, improving the education of economic and social disadvantaged, improving the education of physically disadvantaged, improving the eduction of physically and mentally handicapped.

Each Department prepares a program analysis relating to various program elements so as to outline the various alternatives completing for funds alongwith their cost and benefit consequences. Decisions taken on the basis of such analysis are then incorporated in the program and Financial Plan of each Agency. Generally such plans relate to 5 years but in areas with long gestation period such as water resources, forest development etc., a long perspective is called for. Thus the programme and financial plan (PFP) expresses objectives and planned accomplishments, wherever possible in quantitative physical (or output) terms and financial (or input terms. Physical description of program element might include for example, the number of youths to be trained in Job Corps camps, the number of children who receive pre-school training and so on. Cost data should be expressed in systems terms, that is all costs-- such as capital outlay, research and development, grants and subsides and current

costs of operations (including maintenance)-- that are associated with a program should be assigned to that element. Thus the PEP reveals some of the future year implications of current budget decisions. Besides by pulling together all the costs associated with decisions to carry on a given program at a given level provides important data for decisions making. It also helps to force choices, on the basis of pre-determined criteria, among programs which compete for limited resources. It follows that PPBS provides a framework for better cost, better choices and better integration between Planning and Budgeting. As such it is a very useful instrument for centralised policy decisions having long term consequences.

Limitations of PPBS:

PPBS highlights trade-offs between close substitutes such as different strategies of deterrence but it cannot provide a basis for broader choices as to whether the U.S. should spend more on Vietnam on proverty.

Programs are not mutually exclusive. Great many program elements serve more than one major programme. Their relative priorities may be different. Consequently no common basis for their evulation could be formulated.

Some of the avtivities of the Government are multi-purpose in character. For instance, providing lunch for school children could be regarded as a part of educational program, health program or farm program. Hence its evaluation in terms of a single objective is difficult.

The merit of PPBS lies in its program structure geared for making better choices; but; there is a danger of the existing structure becoming rigid. Unless new alternatives are continuously explored the benefits of the systems may not be fully realised.

The success of the PPBS also depends on accurate estimates of cost and benefit streams. As such it certainly is a great advantage. Where existing programmes are sought to be extended marginal analysis can also be applied. It is also possible to ascertain opportunity costs involved but there will be so many pit-falls relating to the future

price-level, discount rate, uncertainty and so on which may vitate the cost-benefit calculations. It is also possible that such quantitative analysis may tend to neglect programs having enormous intangible consequences. In any case PPBS is not substitute for committed managers and administrators. It does not also eliminate the need for human judgment. At best, it can only help to narrow down the gap between data and decisions. In this limited sense PPBS is a contribution towards national decision-making.

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